INTN'L MONTHLY MAGAZINE-BY AND FOR ACTIVE RADIOAMATEURS

RADIOSPORTING

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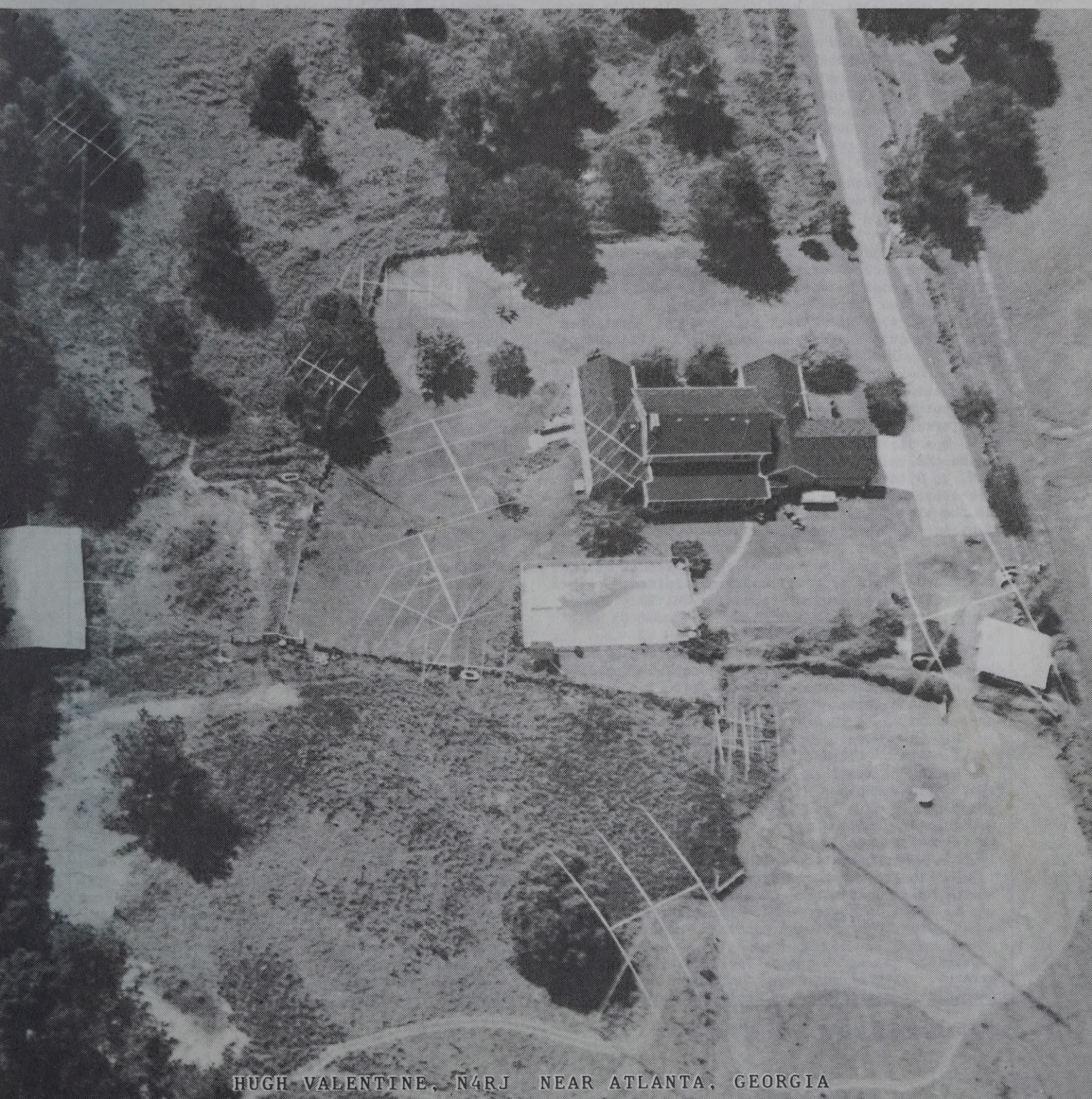


HUGH VALENTINE, N4RJ NEAR ATLANTA, GEORGIA

Announcing:

First IRSA World Radio Championship Contest

Phone: Saturday October 4, 1986, 0000 to 2400 GMT
CW: Sunday October 5, 1986, 0000 to 2400 GMT
(First full weekend in October)

The single operator stations may operate no more than 22 hours out of the 24 hours on each mode. A minimum of two hours of rest time may be taken in one or two rest periods.

The multi operator stations can operate the full 24 hour periods.

1. Objectives: For amateurs around the world to contact other amateurs in as many countries as possible. All contacts with fixed or mobile licensed amateur radio stations around the world count.

2. Bands: 1.8, 3.5, 7, 14, 21, 28 MHz

3. Number exchange: Signal report plus the consecutive QSO number starting with 001. (59001 on phone, 599001 on CW)

4. Points: Each correctly sent exchange is worth one point, each correctly received exchange is worth one point on phone and two points on CW, a total of two (three on CW) points for each error free contact. The same station can be contacted only once on each band and mode for a valid point credit.

5. Multipliers: A multiplier, one for each different DXCC country contacted, plus one for each call area in the following countries: USA (W/K/N etc. 0 - 9), Japan (JA1 - 0), Australia (VK1 - 8), Canada (VE1 - 8, VO1, VO2, VY1), RSFR-USSR (UA1, 3, 4, 6, 9, 0) on each band. (Do not count VK1 as a VK - country, too.) Also, a multiplier of one for each of the land, maritime and aeronautical mobile stations (/M, /MM, /AM).

6. Scoring: The final score is the result of the total QSO points from all bands multiplied by the total multipliers from all bands.

7. Categories of competition:

Phone and CW are considered as two separate contests, however, the Combined Phone and CW scores will also be listed and awards issued.

H. High Power - stations using the maximum legal limit up to 1000 Watts output (2000 W PEP)

L. Low Power - stations using the maximum output power of 100 Watts (200 W PEP)

Q. QRP - stations using the maximum output of 5 Watts (10 W PEP)

In each of the above power groups there are the following categories:

A. Single Operator - All Band
B. Single Operator - Single Band
C. Multi Operator - Single Transmitter
D. Multi Operator - Multi Transmitter
E. Club Competition - Combined Phone and CW

Category A and B can be operated by a single operator, without any other assistance from other operators, repeater nets or bulletin boards.

Category C and D includes club stations, stations operated by more than one operator and single operator stations using repeater, spotting nets or any other assistance while operating.

The single transmitter category stations may use only one transmitter which is connected to the power source during the contest. In case of failure, it may be replaced by another transmitter. Spotting operators may only use receivers or transceivers with transmitter disabled.

The multi transmitter category stations may operate one transmitter per band simultaneously. All transmitters must be located within a 500 meter diameter or within the property limits of the station licensee's address. The antennas must be physically connected by wires to the transmitter.

Category E - Club Competition entries may claim a maximum of one station per category, in selected power group, on each mode (maximum 18). The final club score is the addition of individual highest scores made by the club members on both modes. Expeditions and mobile operations by the club members can also be counted. The club official must submit a list of stations, their category and scores. Each power group will be judged separately.

8. Awards: First place certificates will be awarded in each category and power group in every participating country, call area and mobile group. The stations having the highest combined score from each country will receive a free one year subscription to *RADIOSPORTING* magazine.

9. Trophies and plaques will be awarded to the highest scoring stations in all categories. If one station would qualify for more than one trophy, the second less significant trophy will go to the next eligible station. Individuals, clubs, societies and companies are encouraged to sponsor a trophy.

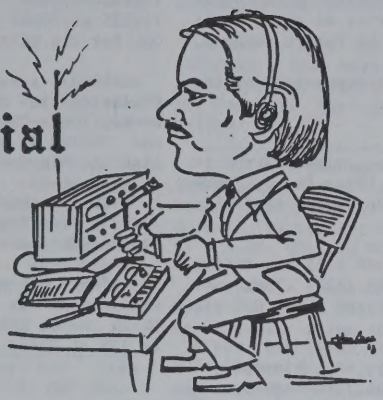
MIXED
World Champion - Multi operator, multi transmitter, W2PV Memorial Trophy donated by IRSA

10. Log instructions: All dates/times must be in GMT. All sent and received exchanges must be logged. Multiplier should be indicated only the first time it is worked on each band. Logs must be checked for duplicate contacts, correct QSO points and multipliers. Do not use separate sheets for each band, except for multi operator, multi transmitter stations who keep separate logs and numbering per band. Single operator stations must clearly mark the rest periods in the log and indicate the total operating time on the summary sheet. Sample contest form kit is available from IRSA for SAE and $1 or 3 IRC.

All participants are encouraged to send the log regardless of their score. They are needed for checking purposes. A one year subscription to *RADIOSPORTING* will be awarded to the 10 stations selected by a draw from the logs received.

11. Deadline: Logs must be mailed not later than 30 days after the contest to:
IRSA WRC Contest, Box 65, Don Mills, ON, M3C 2R6 Canada

ve3bmv Radiotorial



Spring. This is another busy contest season of the year: ARRL DX contests, CQ WPX and a garden variety of other contests for little pistols and big guns. Lee, KH6BZF, says that the WPX SSB weekend should be a good one, again. Last year, when the bands were quite hot, a number of world and other records have fallen. Now is the time to concentrate on low bands from 40 meters down. Don't be discouraged by the lack of good real estate. Many operators have achieved super results from small city size lots using their skills. Low angles of radiation "are in" during the low sunspot times, so get your flag poles and scrap wire out of the closets and fire them up.

We did not get the CQ WPX results on time. Thanks to WA2MNM's relay on 2 meters, we managed to get the world scores and figured some records. Have a look at them, find the weak spots and do some fixing. 80 and 160 are buzzing with activity so, now is the time to work those rare ones for our monoband DXCA awards.

We were all very saddened with the Space Shuttle accident. A very unfortunate loss. One little thing went wrong and seven brave astronauts were lost. This has a parallel in our tower and antenna work. Be carefull! One little slip and there could be no return.

Statisticians say that it was bound to happen. Compared to other modes of transportation, the NASA space travel record looks very impressive. People get killed on trains, airplaines and passenger cars. Those seven pioneers were in the spotlight.

I applied for the Canadian Astronaut Program hoping to get the chance to participate in the experiment to support my conductive/refractive radio wave propagation theory. Can you imagine operating on HF from the Shuttle during the contest weekend?

I was hoping that we would be out of the heavy workload and going full bore on the magazine, but no such luck. Looks like it will be another month of eighteen-hour workdays but in March we should be able to get down to our long overdue facelift. We will be going into more pages because, thanks to our contributors, there is more material coming in. Articles that required some more work had to be postponed. We have some super stuff from Judge, K7GCO, on antennas, which we hope to include in the next issue.

Also, the CAN-AM results were not ready for this issue. Last year's certificates will be mailed out soon.

I was a guest speaker at the Southeastern DX Club Dinner in Atlanta. The southern hospitality is no myth. (I hesitated getting on the airplane during the 5A hijackers' comotion and was very relieved to land safely). Those SEDXCers are a very nice and "professional" bunch of guys! Carl, WB4ZNH, was a gracious host. We had the pleasurable visit with Hugh "Val" Valentine, N4RJ, whose station you can see on this month's cover. "Val" told me about his experiences at VP2KC. We will have the article on this remarkable operation in the next issue. Want to find out how to make 40 contacts in five minutes? Stay tuned.

After the February issue was printed I realized that we had a defficiency in our WRC contest rules. We counted all power groups together, overlooking that there are also 6 monoband categories. That would make it a maximum of 54 logs that a club entry could claim, which is a bit too much.

The change is this: the club category competition will be run in each power category, separately. One team can compete and submit the scores of the team members, one each from each category in that power group - a maximum of nine entries on each mode - or 18 alltogether. The team members can be selected from those club members having the highest scores in each category. They don't have to be selected before the contest. A club can have two or three horses running in each category and claim the best one for their club competition score. This way the club can put up more than one team, perhaps one or more for each power group. This will give the clubs a chance to compare scores and quality. We would like to know which club has the best operators rather than just how many.

We are looking for trophy sponsors for this promising world class contest. Don't be shy!

Our ranks are growing. We welcome aboard John Kitchens, NS6X, as a VHF/UHF Contest Column leader. John has quite a professional background as a writer/photographer, an active contester and a member of Southern California Contest Club.

For those of you who have a computer and are using it for text entry - wordprocessing, send us your articles via modem or on diskettes. We can take 300 or 1200 baud rate (ASCII files prefered), or diskettes with Commodore, Apple II (Apple DOS or CP/M), Epson QX-10 or IBM-PC formats. If you need more details, please let us know and we will send you the guidlines. It is a big help for us and will speed things up tremendously.

RADIOSPORTING will be in Dayton again, this time closer to Room #1, where the DX and contest forums are run. We hope that you will find us this time. Drop by, have an eyeball and tell us what you would like to see in our magazine. Also, I will be floating around in the hospitality suites. We hope to have a chance to discuss the merger of all the little smoke filled suites spread over two hotels into one big one. This way, more people can see the slide presentations, each clubs' "refreshment booth" could be working into the wee hours and we can be all together, rather than scattered over two hotels and umpteen hospitality suites. We need someone from the Dayton area to pick a suitable place and take care of the arrangements.

Again, a reminder, to renew your subscription please check your label for the last issue code. Join IRSA and support our contesting and trophy programs. This month we are doubling up the expiry code in order to get in sync with month on the cover. Everyone will have their code increased by one month.

See you all in CQ WPX SSB on 80 meters!

73 de Yuri

DX NEWS

ART HUBERT, N2AU

436 N. Geneva Street, Ithaca, NY 14850

The DX news from around the world as exchanged on the IRSA net and from other sources: Frankford Radio Club, Kansas City DX Club Newsletter, LIDXA Bulletin, QRZ DX, PVRC, NCDXC CW Bulletin, South California DX Bulletin, Westlink Report, Worldradio, KE2C, DJ9ZB, VE3BMV.
The IRSA net operates on Sundays around 14.200 MHz, starting at 2000 Z and 3.830 (Mondays and Fridays at 0200 Z).

Contesters and DXers welcome the month of March. For both, it means the ARRL Phone DX Contest and the CQ WW WPX Phone Test held at the opposite ends of the month. March also means Spring for those of us in the Northern Hemisphere and with it some of the best propagation of the year. So, for all of us, good propagation translates into good DXing.

Your response to my October column dealing with the CQ contest format was appreciated. But some of you misunderstood me. I'm talking about DX contests and scores, not day to day DXing. I still believe, there are geographical disadvantages to contesters the way it is set up. I also think the way the ARRL awards winners by area is a little bit more fair to those who participate than CQ's format. Enough on the subject. Again, thanks for your comments.

Over the past six months or so many questions have been asked by DXers whom I've been in QSO with. I will list several of the more interesting and thought provoking ones. The questions are:

Should the honor roll be revamped at a set time, like starting over every 15 or 20 years? What kind of burden would this cause to the DX or to the award itself?

What does it take to work them all?

Who was or is the best DXer you have ever known?

Should the control of DXCC be solely in the control of the ARRL or should other Radio Societies have a say like the RSGB, REF, DARC, JARL, etc.?

What can be done to help alleviate the problems on 75 meters so everyone can enjoy the band?

If you have any thoughts on the above questions, please write me and I will express your opinions in future columns.

Let's see what is happening in the world of DX:

AFRICA:

A22DP - Dale a missionary in Botswana. He will be there for two more years. He is active on 14.194 at 1945Z. QSL via W7GVC.

A25/W6KG - Lloyd and Iris are active from Botswana signing /A25. They are active on all bands CW and SSB. QSL via YASME.

Lloyd and Iris have concluded their operation as 3D6QL in the Kingdom of Swaziland with 130 countries worked and nearly 6,500 contacts on all of the HF bands. This expedition was unusual, because they organized a small multinational, two-vehicle convoy in Lesotho and drove to Swaziland. The other members of the group were 7P8CM English, 7P8DF German, and the girl-friend of 7P8DF a native o Lesotho; and they were all assisted in the operation by 7P8CI Austrian. All of the group except Lloyd and Iris made the trip primarily to conduct the first major satellite operation from the Kingdom of Swaziland. They made about 400 contacts with amateurs in 40 countries.

All of Colvin's spare time in Swaziland was spent trying to get visas to enter Mozambique, but thus far their efforts have resulted in failure.

W2ZZ - will be active from CT3 during February and March, taking part in all the major contests. He will be signing W2ZZ/CT3 and be very active on 160 meters. Look for him between 1.813-1.835 nightly.

OH2BH and OH1JT - will be active from CT3 in February and early March. QSL via OH2BH.

FR7AI - Guy is rumored to be going to Tromelin from early February until the end of March.

FR4ZD and FR4DA - will continue to be quite active on 20 meters. Look for Guy, FR4ZD, on 14.025 at 1845Z and FR4DA near 14.203 at 2015Z.

Sudan - activity from this one is picking up. DJ1US/ST2 is active on 14.003 at 1355Z. QSL via DF2RG. ON7IP/ST2 is active on 20 meter SSB daily, along with 6T2MG. 6T1YP has been worked on 7.005 at 0440Z. QSL via CBA.

J5 - Guinea-Bissau is represented by J52UAG on 14.217 at 2300Z and J50BBE operating CW on 14.008 at 2230Z.

S90AS - popped up on the bands unexpectedly in January. Sal was active on all bands SSB and CW. He will also try to operate form 5V and TY during February and March. QSL via IT9AZS.

S92LB is reported to be very active around 14.183 after 1900Z.

YU3KI - has been signing /5NO on all bands CW. Try 14.015 at 2000Z and 7.002 at 2145Z. QSL via YU3KI.

SM0MLL - has been active from C9 on 14.200 at 1900Z, but like all the others, no written permission.

TZ6FS - Dyane has been active on 21.225 at 1600Z and on 14.160 at 1745Z. QSL her via DL4BC.

5X5GK - Jerry will be coming Stateside in early April for several weeks. Jerry has been active on 14.140 and 14.160 at 200Z almost daily. Look also for him on 3.753 at 0400Z.

S42U - this operation in early January from Transkei was by ZS2U, which is the QSL route.

5V7RW - Ron will be active from Togo, for another six months. He is active on 10-20 meter SSB only. Look for him on 14.222 at 2045Z. QSL via WB4LFM.

ASIA:

A4XJZ - Mohib has been active on 3790 at 033Z. QSL via CBA.

A92EM - John has been keeping Bahrain available on 40 meter CW. Look for him around 7.005 at 0330Z. QSL via CBA.

AP2SQ and AP2MQ - are active on 20 meter SSB most morning around 1345Z. QSL both via CBA.

BV0BG - fired up from Taiwan in early January. They made over 7000 QSOs on all bands 160-10. This was the first time BV has been active on 80 and 160 meters. QSL via W3USS.

BV2DA - Feng ex XW8BP has been active on the low end of 40 meters. Try 7.004 at 1300Z. QSL via DL7FT.

JY9RL - operator Alan is active on most bands. Look for him on 3.778 at 0500Z and 7.007 at 2300Z.

TA1E - has been keeping 80 meter DXers happy. Check 3.594 at 2330Z and 0400Z. He listens for North America around 3.802.

TA2D - is active on 20 meter SSB most days. Listen around 14.180 at 1550Z. QSL via the Bureau. TA2C will be also active very soon.

VU2GDG - provided a few North American 160 meter DXers with a surprise in early January. Lucky ones included K5UR, WB3GCG, W4DR and KA8FFO. Look for Gopal on 1.841 (SSB) at 0100 to 0130Z.

9M2AX - has been keeping the low end of 40 meters hopping with his strong signals. Try 7007 at 2330Z or 7.003 at 1300Z.

ZC4MR - shows occasionally on 3.789 at 0345Z and 14.226 at 1900Z.

OE5JTL/YK - with the United Nation Peace keeping unit in Syria will be there for at least six more months. He has been active on 3.792 at 2300Z.

VU100CCI - if you worked it in January, it was a special call celebrating 100 years of the Indian Congress.

XU1SS - Kim is active on 20 meter SSB, but is having receiving problems due to a poor antenna system. She can be found with Robin, DU9RG, on 14.180 at 1400Z on Thursdays. Robin has sent Kim a 40 meter antenna and hopes to have her become active on that band once more.

KM1R - was to visit Viet-Nam in early February, rumor has it, to try for operating permission.

4X4NJ - has been providing the top band DXers with that Asian contact for WAC almost nightly. Try 1.832 at 0130Z.

I5JHW - Tony activated 8Q7 signing 8Q7CG for a week or two in mid-January. QSL to Tony's home call.

VU2HMD - showed from the Anadamans in January signing VU2HMD/VU7. Word has it he had no written permission.

EUROPE:

C31OF - operator Tony has been operating near 3.794 at 0115Z. QSL CBA.

Franz Josef Land - has been provided by: UA1OT on 1.831 at 0500Z and 3.508 at 0530Z, UV1OO is active on 7.002 at 0100Z and 14.019 at 1840Z, and RZ1OWA on 7.020 at 1315Z.

The plans of several U.S. DXers to activate JX land in March have been scrapped until this fall.

OY5NS - Niels has been providing a new one to the DXer and prefix chaser on 40 meters. Look around 7.000 at 0110Z. QSL via CBA.

UO5GR - with a big signal on 3.649 listening up for the North American crowd at 0600Z. QSL via Box 88, Moscow.

3A2CZ - was active on 14.002 at 1230Z with a big pileup. Said to QSL via WA3HUP?

IS0WON - has been keeping the 75 meter DXers happy on 3.795 at 0530Z.

9H1EU - Tony, can also be found on 75 meters, look for him on 3.795 at 2200Z.

AMERICAS:

FP5HL - Henri has been very active on all bands 80 to 15 meters. Try 3.505 at 0300Z and 7.004 at 2130Z. QSL via CBA.

HK0BKX - is back home and active on CW daily. Look for Francisco on 7.001 at 1200Z. QSL via WB9NUL.

P4 - Aruba has been very active: P4/KQ2M showed in early January providing CW and SSB QSOs on all bands. QSL via KQ2M. PA0FM/P4 has been active daily on 14 MHz SSB; P4DO has been on 3.787 at 0200Z. ARRL says it will be a new one in 1990.

TG3JCA - was a special events station celebrating the Third Annual Central American Games. The station was active on all band CW and SSB during December and January. QSL via Box 115, Guatemala City.

TG7XKQ & TG6XCD - have been providing the prefix hunter with a new one on 20 meter SSB after 2200Z.

VP2V - was activated by several JA DXers in early January. If you worked: N2AIR, N2DHZ, JA2VIK or JP1DYZ signing portable VP2V, QSL via JG1GQT Box 12, Shinjukukita-Ochiai, Tokyo 161, Japan.

3Y9WT - who was active in January was Antartica not Bouvet. QSL via LA9WT.

K4LTA - will be active from J3 in February and early March, possible signing J38A. Bill will be active in the DX Contests during his stay on the Island.

PJ9J - if you worked him in the CQ WW 160 Contest, that was John, W1BIH/PJ2 with a special call, which is good only during the contest weekend at the cost of $25.00. QSL via W1AX.

VP8BFC - rumor has it of a possible operation from South Sandwich Is. in early March, using this callsign.

VP8WTW - has provided DXers with a QSO form the Falklands. Check 14.220 at 0130Z. QSL via G4ZCN.

4U1UN - has been quite active lately on all bands CW and SSB. Try 1.845 at 0300Z. QSL via W2M2V.

OCEANIA:

DU9RG - Robin has been very active near 7.089 at 1030Z daily. QSL via CBA.

FK8BT - on 7.021 at 0710Z and FK8FF on 7.007 at 1115Z have been providing 40 meter DXers with New Caledonia.

FO8JP - on 7.010 at 0710Z and FO8LQ at 0430Z have been providing Tahiti to the deserving DXer.

KH0AC - Len has been providing a new one on 75 meters. Try 3.795 at 1130Z. QSL via K7ZA.

VR6JR - should have left Pitcairn by now. Jim made over ten thousand QSOs during his stray on the Island. Due to transportation problems, Jim's stay was extended for an additional four months. QSL via G3OKQ.

SM6FYJ - Gust has been touring the Pacific, signing 3D2OG and A35OG on all bnads CW and SSB. QSL to his home call.

KZ5M and XYL N5GTH, will be active from Micronesia and Palau signing KC6DM and KC6HM during February. QSL via KB5FU.

NA6T - will be signing portable KH7 in late March during the CQ WW WPX Contest. He will be active on all bands.

YB2BNJ - operator Ham has been providing the 40 meter DXers with a QSO on 7.005 at 2145Z nightly. QSL via CBA.

ZL8OY - Chris is active on all bands CW and SSB. Check 3.799 at 0750Z and 1.838 at 0715Z.

3D2DM - Dale has been active on 75 meters. Check 3.800 at 0730Z.

VK9LM - Rudi is active again form Lord Howe Island with a new callsign. Try 7.008 at 0730Z and 3795 at 1130Z. QSL via DJ5CQ.

N7ET/DU7 - operator Dale has been providing a long path QSO for the 40 meter DXer. Try 7.005 at 2230Z.

DX TIDBITS

According to PA0GAM, editor of DXpress, the top ten countries needed by DXers in the world on mixed mode (both SSB and CW) are: ZA, 3Y, 7O, VU5A, XV, XZ, YA, 5A, 4W and 1S. On CW only, the top are: ZA, YA, 7O, VU5A, 1S, 3Y, XV, VP8 (S. Sand.), 5A and ZS2(M).

The price of an IRC at the post office is now $.80 which makes QSLing a little more expensive using this means. Time to look for "used" IRCs.

Looking for a card from 5A3TX? Try W3HNK. He has some of the logs.

Need a ET3WH paste board? Try AI7B whose old call was W7TDK. He was the QSL manager for Bill, ET3FMA. Can be confirmed through Don, W4WJ.

N4CC informs that John Bassford, ZC4GB worked in May 1967 is now G3HHT. Does anyone have any info on VS9PJV, Hal Parker operating from Perim Isl. in the early 70's? Please let Greg, N4CC know.

In the QSL help area, does anyone know the whereabouts or QSL route for the following: 9N1RA - 1970 operator was YL Jenny and her manager was K6OE, who is now a silent key; VS9ARS of 1966; 5A1TX who operated from Wheelus in Tripoli in the late 1960s; and 5VZJS operation of 1971?

To make this column as informative as possible, I need input from RADIOSPORTING readers. In addition to the IRSA net frequencies and times I will also be on 14.250 MHz at 2300Z Tuesday evenings and 3.830 MHz at 0200Z Friday mornings. Also, information can be sent to me at my home address and I will reimburse your postage costs if you wish. Thank you for your help.

ARRL ADOPTS 160 BAND PLAN

The ARRL Board adopted a modified band plan for the 160 meter band. CW, RTTY, and other narrow band modes will be urged to use 1800 to 1840 kHz, while CW, SSB, SSTV and other wide band modes can use 1840 to 2000 kHz. Because the segment from 1830 to 1850 is the most common international allocation in the band, amateurs are encouraged to use it only for intercontinental QSOs. The Board did not agree on proposal that these subbands should be incorporated in the FCC rules at this point. The Board agreed that Field Day activities and communications seeking award credit may be carried on in all amateur bands except 10.1 to 10.15 MHz, where U.S. amateurs are required to protect non amateur services of other countries from interference. (SCDXC Bulletin)

N4MM liaison for CAC

At the recent ARRL Board meeting, President Larry Price appointed John Kanode, N4MM ARRL Board Liaison for the Contest Advisory Committee. John Lindholm, W1XX, Chairman of the ARRL Awards Committee informed John that Awards Committee will address the recent action of CACon use of non-amateur communications during contests to obtain contacts. The CAC voted 11 - 0 in favor of adding this rule to all ARRL contests. (PVRC)

160 m Bulletin

Founder - Stew Perry, W1BB

Top Band News Americas

Dennis Peterson, N7CKD

4248 A Street SE, Sp. #609, Auburn, WA 98002 Tel. (206) 833-7243

READER RESPONSE

At this time, the response to possible contribution to this column has been rather limited to say the least. I was hoping to obtain a rather good response for this column from the many readers of *RADIOSPORTING*.

I have received a few replies to some of the material presented thus far since the merger between *RADIOSPORTING* & The West Coast 160 Bulletin. What I want to do at this time is to use a portion of this column to answer some of the reader responses rather than reply in individual letters as I have been doing. I feel that there are a number of readers and newcomers to TOP BAND that could prosper from some of the inquiries received. Everyone needs to be educated and given a refresher on various topics from time to time. Hopefully, many of you will send some of that knowledge to me for future publication in RADIOSPORTING. Your cooperation and support is very much needed to make this section of the magazine more informative and resourceful. The following excerpts are from some recent letters received from readers of RADIOSPORTING MAGAZINE:

Carl Huether, KM1H Pelham, New Hampshire: "I recently received a complimentary copy of Radiosporting and discovered your column. Radiosporting just obtained a new subscriber!" Carl has just finished shunt-feeding his tower, and erecting several beverage type antennas for receive; and is experiencing some very favorable results and excellent DX contacts. As of December 24, 1985 Carl has 111 countries worked and 57 confirmed. A new tower has since been erected and an inverted-vee placed at 130 feet for horizontal polarization. Currently operating with only 100 watts until parts for a 1500 watt amplifier can be procured.

Jose Garriga, EA3VY Tarragona, Spain: "Dennis I have just completed WAS on 160 by working KD7HH in Wyoming. With WAS out of the way now, my efforts are going to be concentrated on the W6's & W7's on "THE WEST COAST." When possible, I will be operating on 1832 CW (+ or - QRM) around my SUNRISE."

G.D. Gopal, VU2GDG Coimbatore, India: "Dennis, I am monitoring 160 meters from 6 p.m. local time here until 6 a.m. local time. From 1900 to 2000 GMT the band seems to come alive and then afterwards becomes quite noisy. The following stations have been worked by VU2GDG: EI8H/59 - 4X4NJ/59 - G3RFS/59 - PA0HIP/59 - LZ2CJ/58 - OH5NQ/59 - LX1BR/59+ - HB9AMO/59+20 - THE FIRST W STATION WORKED WAS KB3AF/? - KG4W/55 - AA4MM/? - N4WW/? - K5UR/? - K8MFO/? - 6Y5IC/? - DJ1SU/59+10 - KA1PE/? - GI3OQR/59+10" (I'm still looking for our contact Gopal; thought I'd be one of the first to QSO with you, but NO LUCK as yet/N7CKD. Thanks Gopal.)

Don Etheredge, AL7Z Fairbanks, Alaska: Don is looking for various pieces of information and articles pertaining to 160 meters (antennas, amplifiers, grounds and ground screens, counterpoises etc., etc.,) Anyone with information and material can write to Don to help increase the TOP BAND LIBRARY of knowledge for KL7 operators. Don's address is: AL7Z/Don Etheredge, P.O. Box 73650, Fairbanks, Alaska 99707. (Watch for a future article in regards to top band operation from Alaska and the many ups and downs that KL7 operators face. N7CKD)

Bill Feissner, AI3Q White Haven, Pa.: "Dennis, congratulations on your merger with RADIOSPORTING MAGAZINE, I am sure your articles will add to the prosperity of the magazine." Bill wants to see a section of the column devoted to various suppliers of hardware and components for top band builders and experimenters.

SURPLUS HARDWARE

Having received several letters of inquiry as to where one can purchase and possibly find some of those hard to find components needed to build various projects, I thought it would be a good idea to mention and bring to everyone's attention the following hints. If you are looking for some of those hard to find amplifier parts, you may be interested in knowing that AMP SUPPLY has a fairly large variety and selection for these projects. Their address is: AMP SUPPLY, 208 SNOW AVENUE, P.O. BOX 147, RALEIGH, NORTH CAROLINA 27602.

If you're looking for all general purpose surplus electronics, tubes, & hardware then ARTTZ ELECTRONICS is the next best place to do your shopping for these items. An SASE and $1.00 will get you a complete uptodate catalogue of parts and surplus electronic gear either ready for use or with some repair work needed to restore it to working order. Their address is: ARTTZ ELECTRONICS, BOX 222, AIRDRIE, ALBERTA, CANADA TOM 0B0 PHONE: (403) 948-5509 The following list is indicative as to Arttz inventory and what he has on hand.

Tubes; tube sockets; cathode ray tubes; variable inductors, fixed inductors, air inductors, capacitors [transmitting mica, ceramic encased, miniature trimmers, electrolytics, bathtub capacitors, metal cased tantalum, plastic encased, push-button switches, rotary style switches, meters, relays - varied assortment. There are currently over 22 pages of inventory items to choose from with their respective prices. You can't beat these prices. I personally built my multiband 5 kW antenna tuner from parts procured from Arttz at a cost of less than $150.00. If anyone knows of other sources, please let me know so that we may pass this information on to other readers of this column and magazine as well.

WANTED:

SUPPLIERS OF SURPLUS ELECTRONICS, TUBES, AND VARIOUS HARDWARE ITEMS. N7CKD, 4248 A ST. SE - SP. 609, AUBURN, WA. 98002

HEARING IS BELIEVING

In the January Issue Dave Kennedy/N4SU wrote an article about the conduct and varying attitudes on top band; not to mention the inconsiderate operators who purposely jam and QRM the frequency with malicious and spurious emissions. I think Dave somewhat summed it all up when he said "The 160 meter band has evolved over the past few years from a GENTLEMAN'S BAND to a band in which open war often breaks out, most often in the 1830 to 1840 kHz portion of the band."

How many times have you been trying to listen to a DX station being worked by an operator in another call area, and a BIG SIGNAL comes on or near your operating frequency with the amplifier well overdriven and his processing turned so far up that his audio is almost unintelligible? To make the problem even worse, his splatter covers sometimes as much as 10 kHz each side of him. When you mention it to him nicely, it only causes belligerent comments and "WAR IS DECLARED." Some of these operators are the top operators around and supposedly are well acquainted with proper operating techniques. It appears that the only operating techniques they actually possess are being sat upon. Call it frustration or whatever, but it does get rather discouraging to be walked on and deliberately QRM'd by some of these so called experts. Yes, the Gentlemans' Band is becoming what 20 meters is known as "THE IDIOTS NIGHTMARE."

Granted we all are human beings and make mistakes once in a while; but these same operators are making the same mistakes night after night after night. The question is "What can we do to put 160 back into the pages of courteous and respectful operating to behoove its GENTLEMANS BAND REPUTATION? Not a single one of us will completely make a change, but all of us together certainly

can. The letters written to the ARRL and to the FCC with regards to a CW sub-band on 160 meters should help. I think we all need to take a closer look at our audio and clean up the dirty ends so others can enjoy the band as well.

I hear so many operators contend that back during the AM days, everyone was very conscious of their audio quality. Some of the amateur radio operators audio was even sometimes better than some of the BROADCAST STATIONS.

Some operators seem to think that it is important and necessary to turn as much processing and gain into the audio in order to be heard. I used to be that way myself, until one evening VE7BS/Bob Eldridge worked with me and the various adjustments I have for tailoring my audio for ease of listening on the other end (receiver end) and for best possible efficiency and output at the transmitter end. It didn't take long for me to realize that I could get just as much punch and sometimes even more out of the microphone with less gain and the highs and lows adjusted properly.

When you work a station with only 40 watts of drive and the mike gain nearly shut down and obtain a 20 over S9 report it should tell you something. KM5X during the 73 contest at about 1030 UTC gave me a contact and report of 5 x 9 +20; and said he thought I was running a Kilowatt. I may not begin to come close to being a BIG GUN on top band, but I'll bet I have the BIGGEST HEAD for a LITTLE GUN knowing that my little signal is just as equal to those operating with high power and overmodulated audio that can't be understood.

Ten years ago, there were few and far between signals heard on 160. I can remember sitting for hours in Illinois just waiting for someone to show up and QSO with. Now, it is getting to the point where you have to sit and wait your turn for a clear frequency. Listen to the signals here on 160 and then go down to 20 and even 75 meters. You won't believe your ears. Believe it or not, we still need additional letters and comments addressed to the ARRL & FCC if we are to obtain that much needed sub-band regulation as is demonstrated on 10, 15, 20, 17, 30, 40, and even 80 meters. Why should the other bands have a cw sub-bands and not 160?

I wonder sometimes why they are being so evasive with our requests. For several years now we have requested these much needed cw sub-bands and have been turned away empty handed.

What do you say guys, isn't it time to get some results? Let's face it, we're all after the same common goal; 100 countries on 160 and we can all get there in due time, but the compression, limiting, and equalization needs careful attention. In other words, proper microphone techniques need to be employed and demonstrated, not to mention the spurs generated from some of the cw signals as well. Any rebuttals and or comments are welcome in regards to this article.

RECEIVING ANTENNAS

There has been much concern and interest shown towards the best and most efficient type of receiving antennas. I don't think that it is fare to say that any particular one is better than the other, because it depends greatly on your environment and what space you have to work with. Some may have acres of land to do just about what ever they see fit to do, while the rest of us are restricted to only a few feet and or a small city lot etc,. The trick of the matter is "TO DO THE BEST WITH WHAT YOU'VE GOT," and employ a system that will enhance your transmit antenna on receive.

There are several types of receiving antennas available for everyone. They are as follows:

1. The Beverage Antenna.
2. The Loop Antenna.
3. The Steering Wave Antenna.

These three antennas offer considerable reduction in signal-to-noise. The purpose of this type of antenna is to reduce unwanted noise to a level that will alow to hear weak signals normally masked by noise. A brief description of each receiving type antenna is as follows: (these are the most common used and easily erectable of the receiving type antennas)

The Beverage Antenna is basically a long wire antenna usually ranging anywhere from 500 feet to sometimes several thousand feet in length. Ideally, the best form of beverage is normally around 1,000 feet long and suspended at 6 feet above ground and terminated directly or through a 200-600 ohm resistor to a ground stake at the far end. Many operators (space permitting) will employ several Beverages in different directions; thus enabling them to copy signals from various parts of the World at the flip of a switch.

The Loop Antennas on the other hand range anywhere from 10 feet in diameter to less than a foot in diameter. "The loop has very little directivity, but has the capabilities of nulling strong local interfering signals down to a bare minimum." The loop seems to operate and perform best in high-noise areas. They may take the shape of a circle, diamond or square; and they come in two varieties, shielded and unshielded. The shielded being the most popular.

The Steering Wave Antenna (SWA) is a traveling wave receiving antenna featuring directivity which is switchable in opposite directions along the length of the wire. It also features an electrically steerable null which can be formed at any angle to the wire. This antenna is a two-wire affair and measures only 238 feet each wire. It does use a set of ferrite cores in the signal path as well as a phasing control network.

A complete Beverage Antenna Handbook is available from W1WCR. If you can follow simple directions and instructions, you shouldn't have any trouble putting this antenna on the air. I have one and it certainly has paid for itself many times over. The choice is yours as to which one of these antennas will work and perform profitably for you.

With this in mind, for starters; you might want to consider several reference sources for constructing your receiving antenna. There are many references available for various types and kinds of receiving antennas. The most logical place to begin your research is with the ARRL Antenna Handbook. Here you will find generalities of construction as well as basic how to and not to notes. The following suggested articles may be of some valuable help and interest to many of you:

GETTING THE MOST OUT OF YOUR ANTENNA, by C.L. "Chuck" Hutchinson/K8CH pp.34-37 QST-July 1983

LOW-NOISE RECEIVING ANTENNAS, by Doug DeMaw/W1FB pp.36-39 QST-December 1977

GROUND ROD RESISTANCE, by Mason A. Logan/K4MT pp.95-101 HAM RADIO-July 1984

THE BEVERAGE ANTENNA HANDBOOK, by Vic Misek,P.E./W1WCR; 142 Wason Road; Hudson, New Hampshire 03051.

The purchase price of this little booklet is $5.00, and you may want to inquire about the availability of the BBR 7731 ferrite cores needed to construct the transformers used in the antenna. They were available for the following cost. 3 @ $3.50 or 9 @ $8.75 or if you want a surplus of them, 90 @ $67.50. These were the prices paid a couple of years ago, you may want to find out if the same figures still apply. (N7CKD)

Vic's book is well explained for everyone. Each chapter is divided into two sections. Section A---Practical descriptions using verbal explanations, antenna patterns and tables. Section B---Mathematical description of Section A. This permits the radio amateur, experimenter and short-wave listeners who wish to get enough practical information to quickly understand and construct a working SWA to do so without the nuisance of voluminous equations. The engineer, on the other hand, who wishes to calculate antenna patterns, null directions and impedances can switch to the mathematics section (B) at the end of each chapter to obtain expressions for quantifying the preceding verbal descriptions. If you desire immediate hardware, skip to chapter 4.

Some of you have asked and wondered how and why KL7's are so difficult to hear and work. Well, consider their location far to the North in the Auroral zone. The signals here suffer from extreme attenuation. The following article is from Don Etheredge, AL7Z in Fairbanks, Alaska.

CONTESTING FROM ALASKA

Here are a few notes on the activity as heard from 120 miles south of the Arctic Circle. You will recall, that we are under the Auroral Oval up here compared to other Alaskan locations, Anchorage vicinity and south which only occasionally experiences this type of absorption. During the 160 contest the weekend of January 17, 1986; the following signals/stations were heard on a SWL [short-wave listening] basis only.

First night:
0700Z many stations heard, but very weak
0800Z WOZTL, K1LPS, KH6DW, K6HNZ, K6SEZ, KC5DX + several KL7's
0900Z NK7I, K6HNZ, KH6DW, K7VI
1000Z KH6DW, NR5M
1100Z K6HNZ, KM5X, KC5DX
1530Z W6?
1600Z KH6AT, JA?
1830Z UA0FAI?, UA0SGJ, UA0QEJ
1900Z UA0KBW

Second Night:
0400Z K6ANP, K6HNZ, VY1CW, K7VIC
0500Z K5I?, KM5X, K7VIC, K6HNZ, VE7ZT, WB8IFP, W7WA
0600Z VE2FYR,WB8IFP, K6HNZ

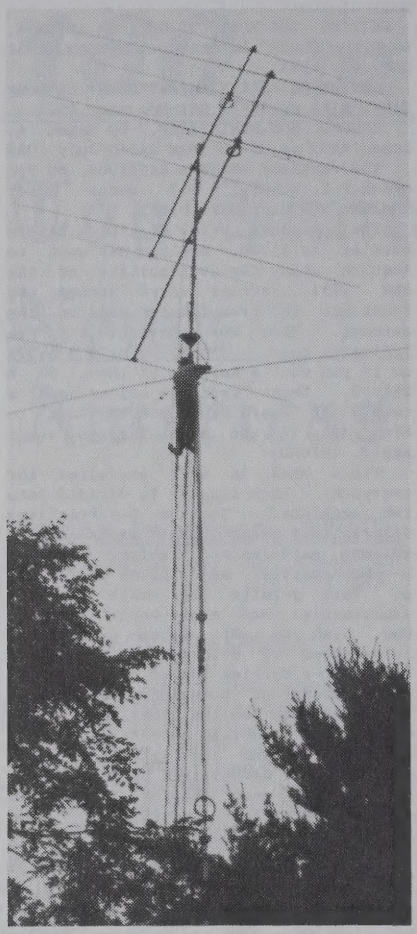


Fig.1

0700Z KH6AT, W6?, K6HNZ
0730Z K6HNZ, N6DX, WB8IFP
1730Z copy Chinese AM broadcasts 1422 & 1475 kHz 4/7, 160 m no signals.

Comments: Our sunrise was 1920Z and sunset 1245Z. All KL7's and VY1 hear and call stations in W/K with about 30-40% QSO success ratio. Noise level here at receive site was imperceptible so stations heard were just slightly above the' noise floor. Used WWV 2.5MHz for reference to propagating conditions when band died to see if path was still open. Equipment used here is as follows: R71A receiver to a 500 foot bent long wire adjacent to the river; a stock R4C receiver which was no match to the R71A. If the W/K stations have noise problems as such, suggest building a noise balancing bridge ala Nelson-Interference Handbook; otherwise listen more-----THE KL7's WERE THERE. Many KL7's and contesters wonder if the US stations might have had their 'squelch' too high. Seldom, except for K6HNZ were any stations even registering a reading on the 'S' meter.

(I think most of us should be thankful with the locations that we have regardless of the problems and extenuating conditions that persist. Nothing can be as frustrating as those conditions present or prevailing in Alaska. I've never been that far North or even operated from Alaska, but it sounds like it must make for "ONE OF THOSE MORE CHALLENGING EVENTS" - N7CKD) Maybe someday when I'm rich and famous I'll get a chance to try and conquer the KL7 mysteries and frustrations. hi/hi

KM1H & HIS TOWER ANT.

In my previous column I briefly stated some information concerning KM1H's tower-antenna (shunt-fed) but did elaborate on it. You have probably enjoyed his article in the previous issue: The Thrill of 160.

The following photos should help in complimenting that article as well as this column. When you look at the photos of KM1H's antenna set up, it is important to know and to have things placed in the proper perspective. First of all, the tower is 100 feet tall, the 20 meter beam is on a 40 foot boom, and the trees in the background are 60 to 80 feet tall. The gamma rod for the 160 feed is made from CATV cable attached at 70 foot level, visible just above tree. (Fig. 1)

Carl says: "We hear on the East Coast that a few W6 & W7 operators have worked UA1OT on Franz Josef during the past few weeks. The big news here lately is that JW0A & OY7ML have made a number of contacts along the East Coast. I'm up to 116 now, but they are coming slow."

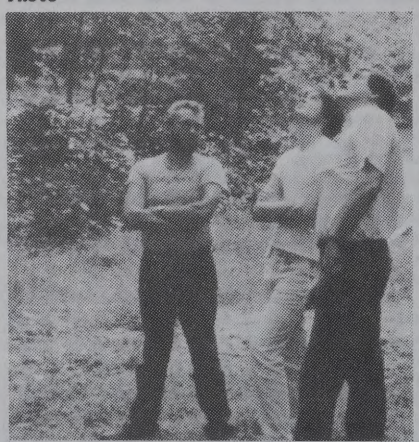
(If you think that it's slow on the East Coast, let's trade locations for awhile Carl! - N7CKD HI-HI.)

"Anyway, African openings are very spotty and the Pacific has been almost totally devoid of anything except for KH6CC."

"The following comment is for Wally/LZ2CJ: I (KM1H) have been hearing many Asiatic Russians between 2130Z and 2300Z but can't get through the European QRM. UD, UF, UM, & UA0 with nice signals and have heard as well 9M2AX four times and the JT station twice. Is it possible for them to stand by for weak DX once in awhile ?"

We have the same problem here on the West Coast trying to break the East Coast Curtain with apparently the same stations night after night working the same DX they worked already the night before. Sometimes you win, and sometimes you loose. We loose more than we win here on the West Coast.

Photo



Left to right: KM1H, KV1Y, K1MM surveying the 20 m project, comments not fit to print.

160 m DX News

Wally Stefanoff, LZ2CJ

PO Box 73, Levski, Bulgaria

It seems that we are coming slowly to the end of one more season on TOP BAND. With sunspot activity going down, more operators are interested in DXing on 1.8 MHz and with increased number of stations active in different areas of the world, more are getting closer to having worked 100 countries on 160 m band.

Many of you maybe began counting the new ones they have worked this season and also are discussing how difficult it is to to obtain the QSL cards from those already worked.

I think we all will agree on the last statement because I have not heard about anyone having received 100 percent QSLs for the new ones he worked. There are always some non-QSLers. (I wonder how I can get confirmed ZD7BW, KV4FZ or HI9DAF for example!)

Some will say, "I'm a contester or a technical type and I don't collect cards. That's why I'm not sending any myself, too. Why waste time?"

Well, I would say that I'm also a contest type, but I've never left a QSL card unanswered.

Just imagine how feels the guy on the other side who you've just picked up, after asking him five time to repeat his callsign and who gave you a new multiplier, finds himself without your QSL card he needs to confirm your country. Suppose he's running QRP and a simple antenna system and you are the only station from your country able to copy him.

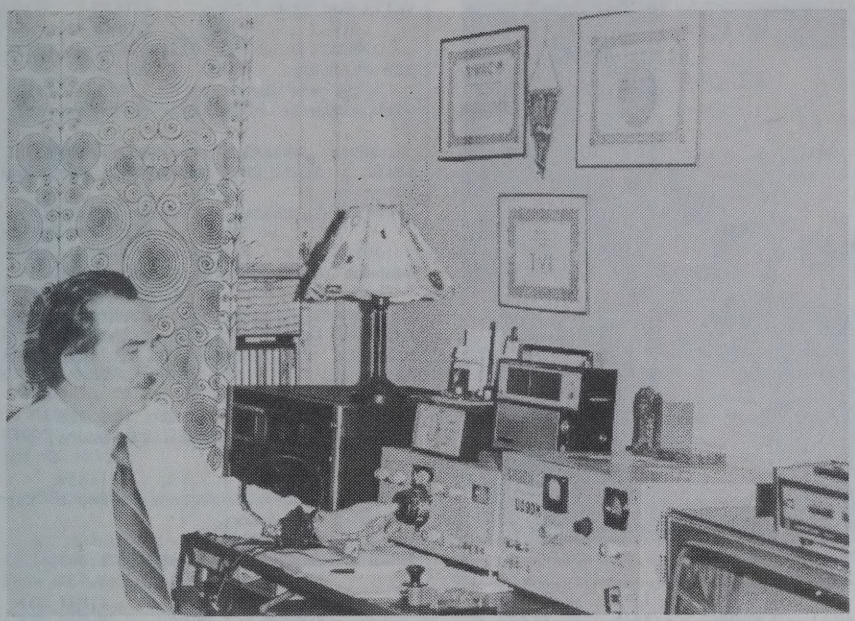
Now let's say you are the technical type and you have just put up a new antenna. You can now hear stations you've never been able to copy before on the band. After your CQ call, you are able to hear and work a bundle of OL's or other QRP stations from Europe who are using low power of 10 W with a piece of wire for an antenna. But you are a "experimenter" and are only interested in how your antenna performs and you consider filling out QSL cards a waste of time.

Then what would those OL's or others have to do? Maybe they will have to wait for someone else who would have "more time to waste" for writing out cards? I know the guys who are always using low power and have been working on their 160 m DXCC for more than 7 years.

Imagine how such operator feels after trying to get cards from such non-QSLers after doing his best for a couple of years.

So, be fair guys - answer QSL cards!!!

Things are moving a bit slower from here because it takes time for materials to reach the editor and I have the



Leonid Starikoff, UA9DM with his home brewed station.

deadline to meet, too.

Some of you told me on the air that the European portion of 160 m news is successful in keeping their interest up in spite of the problems listed above and I am happy to hear that.

In this issue of "Radiosporting," you'll notice the incomplete listing for North America, Europe and Asia. I don't have info from other continents. I am waiting for the reply from PY1RO, LU9EIE, CP8MD, VK6HD, ZL3GQ, ZS5LB, EA8QL, and others in order to form the lists for Africa, Oceania and South America. Some stations on the lists are mentioned only as holders of 160 m DXCC awards because I don't have their exact total. Not putting them on the lists wouldn't be honest from my point of view.

EUROPE		CFM	WKD
	G3SZA	182	188
	PA0HIP	181	185
	HB9AMO	141	148
	DL9KR	134	136
	UT5AB	133	142
	LZ1KDP	104	135
	LZ2CJ	104	125
	GI3OQR	DXCC	?
	GW3YDX	DXCC	?
	GD4BEG	DXCC	?
	+ 16 other EU holders of DXCC		
ASIA			
	4X4NJ	128	145
	UG6GAW	107	139
	4Z4DX	DXCC	?
	JA1GTF	DXCC	?
	JA2GQO	DXCC	?
	JA5DQH	DXCC	?
	UA9MR	61	79
	RA9AKM	60	87
	UM8MM	58	72
	UF6FHC	51	68
NORTH AMERICA			
	W8LRL	185	188
	AA1K	176	184
	W3BGN		157
	W0ZV	142	150
	K3JLT		127
	W3GU		109
	W2BHK		101
	NF2L		91

and another 72 USA holders of DXCC 160 m

Let's talk about contests!

Pierre, HB9AMO said he has worked over 700 QSOs, 65 countries and 17 zones in the CQ WW CW 1985 contest.

Riki, 4X4NJ, who operated as K7NJ/4X in both SSB and CW parts of the CQ WW '85 contest told me he's not going to send logs. He said he disagrees with the CQ contest committee on how they counted some scores and records in past years and because of that, he decided not to send in his logs this year.

LZ2SC who operated LZ2CJ in the CW portion of the CQ WW, did not succeed in claiming a higher score than the world record of UP2BBT/U6V as he had hoped to do right after the end of the contest. There are some rumours that some Hungarian club stations (HA5G) may be allowed to work on 160 m only in some selected contests in 1986 and all HA stations will be able to use the band beginning in 1987. It seems that if we are patient enough and if all is true, we should have a new one coming in the near future!

According to the information printed in the USSR magazine "Radio," there were about 3000 USSR hams active on 160 m in 1982 and there are about 5000 active as of December '85. Eight USSR stations worked more than 100 countries and 4 USSR stations have more than 100 countries confirmed. Those having 100 countries confirmed are: UT5AB, UG6GAW, UB5ZAL, and RB7GG. Those having more than 100 countries worked include UT5AB, UG6GAW, UB5ZAL, RB7GG, UA2FF, RA3DOX, UA3QGO and UT5BN.

A very good opening to the West Coast was reported by Dave, G3SZA, on the 30th of December. Dave heard/worked seven W6-W7 stations between 0600 and 0630Z that morning. W0ZV said that 4X4NJ has been heard on the West Coast by W7EJ and others.

I met 4X4VE, Arie, a couple of days ago and had a very nice chat with him. Arie was 5N8ARY in 1983 and was very active on 160 m from there. He was not very active after leaving there because he was working on his antenna farm. He is using TS430S/TL922 now with a full-size inverted-vee on 160 meters.

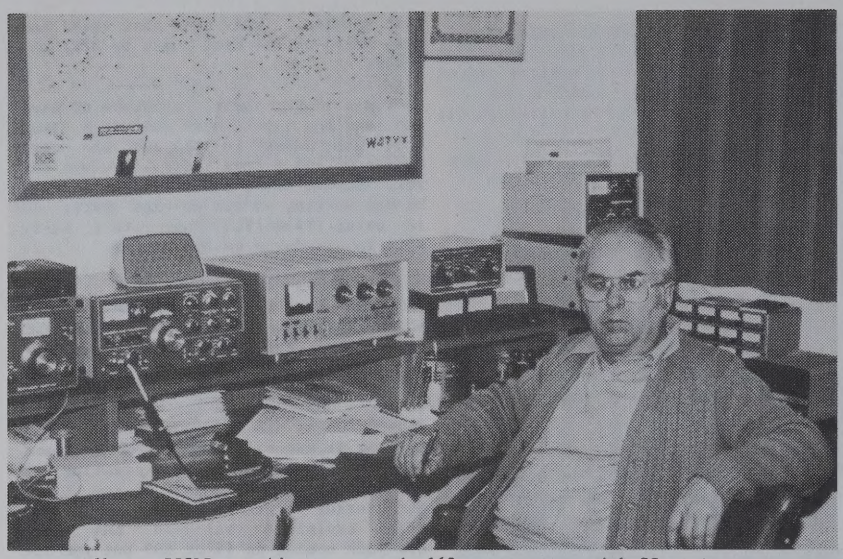
4X4VE says the band was very quiet in 5N8 land when there wasn't QRN. "When you've got QRN, you just have to switch off the rig and watch TV until another night - Hi," Arie said. He was working Mike, VK6HD, almost every evening without QRN - reception was very good especially at his first QTH Kauo. 4X4VE told me it was easy to work on the band because he was the only interesting DX station on the band most of the time, but during contests its a real mess! Arie explained that you can hear everyone coming in 59 or 599 but you are not able to break through. He has made some experiments with shortened antennas and finally came to the conclusion, "run always a full-size antenna if you want to get through."

The best signals from Europe in 5N8 during 1983 were SM6EHY and HB9AMO, according to Arie. VS6DO is also very strong. Arie has worked some VE7's and W7's but did not succeed in working W6CA from 5N8ARY. He said his best QSO from there on 160 m was T32AF. They had arranged the schedule first with him on 80 meters. Then when the time came, Arie put the rig on the arranged frequency and all he was able to hear was noise! Suddenly, after a couple of minutes, he heard T32AF calling him. They exchanged reports and when Arie tried to tell him to QSY to 80M, he disappeared. Later Arie received a letter from VE7DX explaining that the QSO was okay and he sent the QSL to T32AF together with a letter.

Finally, 4X4VE told me he was not on the air during the CQ WW 160 m CW contest in 1983 from 5N8ARY. He says somebody probably used his callsign because he has received a lot of QSL cards.

Here is some news regarding band conditions. Very interesting things have been reported by different stations world-wide about some the changing conditions lately on 160 meters. Stations such as W0ZV, 4X4NJ, UG6GAW, SM6EHY, LZ2CJ, and others, have reported that the DX signals on the USA - Europe path (or via Asia), peak about 3 hours before exact sunrise time (in Europe or Asia) this season. Also some shift in the usual USA to Europe (or Asia) path to the south has been observed by a number of stations in USA, Europe and Asia. Signals have been estimated as coming about 90 degrees south from the Caribbean area instead of the usual path. The interesting thing is that the same thing has been reported happening lately by ON4UN on 80 meters. Only when the band is "wide open," signals are traveling via the usual "short" path.

Another thing that you may find interesting, is what has been observed by W0ZV. We both discovered that right after sunrise at our QTH's, DX signals are better received most of the time on inverted-vee antennas, rather than



Albert, ZS5LB provides many needy 160 m operators with ZS contact.

verticals or beverages, sometimes non existent at all. Has anyone else observed the same phenomenon? Please me know if you have. (It looks like more and more proof and support for VE3BMV's Conductive/Refractive Radio Wave Propagation Theory. Ed.)

ZS5LB, Albert, is one of the most active stations from Africa on 160. Bert has been QRV on 1.8 since 1981. He is using a TS520S with a TL922 amplifier. The antenna at his previous QTH (until July '85) was a long wire - 20 meters long and 20 meters high.

Albert moved on July '85 to a new QTH about 30 km outside of Durban and has been reported to be active this season. Albert is 63 years old now and is ex OE5LV. According to him, other ZS stations who are active are: ZS6BXB, ZS5BK, ZS5MY, ZS4PB and ZS6DW. South African stations are allowed to operated between 1810 and 1.850. There is no activity presently from ZS3. Albert says that 9J2JN is active from time to time. All African stations are more active on Top Band in their winter months of June, July and August and are also active during the months of October through February. Their operating frequencies are usually between 1.820 and 1.826, or 1.833 from 2200 and 2300Z or from 0300 to 0400Z.

ZS5LB did not mention what his 160 m DXCC total is, but he did say that he is getting closer to 160 m DXCC.

ACTIVITY INFORMATION

(All CW except when SSB is noted.)

USSR EUROPEAN PART

UA1-6	UA3QPV	2150Z	1.830
	UV3ABN	2159	1.839
	UA6SEY	2159	1.839
	UA3GWZ	2200	1.831
	UV6HEK	2215	1.840
	UA3PFN	1400	1.835
	RA3DOX	1414	1.833
	RA3RNM	1418	1.836
	UA3PKT	1420	1.844
	UA6JAR	1532	1.861 SSB
	RA3EC	1605	1.833
	UY5YY	1415	1.836
	UB4MPE	1532	1.861 SSB
	UT5PI	1715	1.838
	RT5UN	1716	1.839
	UB5IS	1746	1.835
	RB4IFR	2153	1.832
	UB5MPC	2155	1.835
	RB5TCS	2220	1.834
	UB5FBV	0215	1.837
	RB5INV	0217	1.830
	UT5BN	0222	1.834
	UC2LZ	1712	1.838

Franz Josef Land

UA1OT has been worked on 1.832 and around 1800Z and later at about 2300Z. (I2ZGC worked him at 1852Z)

REST OF EUROPE

Greece

SV1PL, Angelo, has been worked on 1.841 SSB at 2225Z. Angelo is using an FT102 and an inverted-vee on 160. His photo and some more details will appear in one of the future issues of "Radiosporting."

SV2QI, Harris, was also on 1.841 at 2250Z on SSB.

SV1TY 0300Z 1.836.

SV1NA/SV9 is reported to be active for a while on 160 m.

SV9ABS, John, has a weak signal in Europe due to a poor antenna. He operates SSB on 1.850 at about 2316Z. QSL via GR 500-07 Pentalofos, Greece.

SV9ABO is also active on 160 m.

G	G3ZEM	2217Z	1.831
	G4IRX/A	2219	1.832
	GW3YIDX	1700	1.833

GI3OQR is reported to be active on SSB and CW during the last couple of weeks.

SM6EHY	1411Z	1.834
SM6LPF	1610	1.833
SM7BIC	1705	1.835
SM4ESA	0222	1.834

SM7BIC, Len, says he has worked 109 countries on 160 and has got 98 of them confirmed. He has one of the highest totals in Sweden at the present time.

Some sources said ON8FW was and is a non-authorized operation. He's sending QSL's but it is unknown whether they are valid for DXCC.

DJ8WL, DL3AM and OE1DH were on 1.835 SSB at 2110Z.

DJ1SU was operating on 1.820 at 2150Z with a dipole at a height of 24 meters.

John, ZB2RAF, reported active at 1845Z on 1.832 CW. QSL to P.O. Box 534, Gibraltar.

ZB2FK is active on SSB at 0228Z.

OZ1LO, Leif and LA2GV, Karry, have been on 160 for the past two months.

HB9AMO, Pierre, and HB9AHL, Willy, appear to be the two most active stations from Switzerland on Top Band lately.

PA3AAV 1608Z 1.835

PA0HIP is active daily for DXers.

F8IH/EA 9219Z 1.834

EA3VY, Jose, has been on 160 m for the past six weeks.

I	IK5DVQ	0225Z	1.837
	IT9ZGY	0219	1.834
	I7ALE	2240	1.841 SSB
	IV3PVD	2212	1.842 SSB
	IK0BYO	2212	1.843 SSB
	I2ZGC	2202	1.836

IK0BYO, Fulvio, is running a TS930S and a dipole 25 meters high. He has made 400 QSO's, worked 55 countries, 10 zones and about 28,000 points in the CQ WW SSB '85 test.

OL9COB	1540Z	1.839
OL9CPG	2152	1.831
OL1BKO	2210	1.840
OK3CQR	0220	1.838
OK1DWJ	0220	1.838

IS0PLQ, Livianne, is on 160 SSB daily. She works CW too, but at a slow speed. The last time she was worked SSB was at 2152Z on 1.840.

T77V, Peter, is active on SSB only and has 110 worked and 99 confirmed.

T77C, Tony, is daily on 160 m between 1800 and 2300Z on both CW and SSB. He says he is glad to work anyone and will arrange schedules on higher bands when possible.

YU1EXY, Students' Radio Club of Belgrade University, is very active on 160 m as usual. Most often the station is operated on Top Band by operators Velinni and Goran on both CW and SSB at sunset and sunrise in YU land. QSL via callbook address or via YU bureau.

HV2CO has been active in December on CW around 2000Z.

JW0A has been reported to be active around 1900Z and later at 2315Z on CW near 1.837. (He's allowed to work CW only on 160 m.)

ASIA

UD6DKW	0230Z	1.834
UF6FBE	2156	1.835
UH8EAP	1537	1.833

UG6GAW - Karlen, UG6GCK, RG6GCE (3 watts and a dipole), were on 1.862 at 1525Z SSB recently.

UA0SNH	1455Z	1.836
UA9OLO	1418	1.836
UA0AF	1755	1.836
UA0ABL	1759	1.836

UA9YFE	1805	1.836
UA9CTZ	1809	1.836
UA9MRV	1818	1.836
UZ9FWR	1835	1.834
HZ1HZ	0400Z	1.828

4X4NJ, Rick, is daily on the band beginning at 0200Z around 1.832.

4X4VE, Arie, (ex 5N8ARY) has been worked at 2335Z on 1.835 CW.

VU2GDG, Gopal, is on 160 m almost every day after 0100Z on SSB putting a very nice signal into Europe according to information from EU DXers who are listening to him every night (I2ZGC, DJ8WL, DL9WR, HB9AMO, etc.).

HL9CW is reported to be active at 2100Z working split frequency - TX 1.805 and RX 1835.

VS6DO is on around 2200Z on CW.

A group of operators using the callsign BV0BG activated the 160 m band from BV land in early January.

It seems as though activity is going down from this continent during the last couple of months if we exclude 5N8BAV.

AFRICA

5N8BAV, Bruno, is using a TS930S with a dipole antenna on 160 meters and is putting a good signal into Europe. He operates both CW and SSB. QSL via I2ZCG. Bruno says that he'll be on the band almost every evening between 2100 and 2300Z.

NORTH AMERICA

The information for this continent will not include USA/VE activity.

QSL for the V2A operation during the CQ WW CW contest is via K8BA.

VP2VI and VP2VA reported to be alive and well on 1.8 MHz. VP2VA has been worked at 0255Z on 1.833 CW. QSL goes via VE3MJ.

J37AE is active around 0420Z (by Len, SM7BIC).

XE1HHA	0600Z	1.840
HK0BKX	0400Z	1.833
HK0CKU	0146Z	1.843

FM5WD has been very busy recently on Top Band. He has been worked around 0411Z on 1.833 and at 0646 on 1.835. You should have a look for him between 0400 and 0600Z near 1.833.

TG9NX has been worked at 0437Z on 1.832.

SOUTH AMERICA

PJ2HB has also been worked at 0612Z on 1840 CW.

PZ1AC was worked on 1.835 at 0210Z on CW.

OCEANIA

VK6HD, Mike, says that he is on the band daily at his sunset and sunrise but conditions have been very poor lately in that part of the world.

KH6XX is reported to be active on the band lately. (LZ2CJ)

K1MM/SV5

HOLIDAY IN RHODES

Jim Dionne, K1MEM

Bill, K1MM and Karen, KA1ESR, Genevieve, N1CPC, and I had decided to find a good place to get away to in the dark cold month of February, 1985. To satisfy everyone it had to be rare on 160 in North America, workable with good operators at both ends, and have other things to do beside radio! We picked Madeira, CT3 and Rhodos, SV5, convinced ourselves that both places would be great vacation spots even without radio, and began planning. Putting the station together was no problem, because we had done it a number of times. Tickets were ordered for both locations. On the last possible day to pay for the tickets, we called in our credit card numbers to Air Portugal. At 1 a.m. the next morning W22Z/CT3 showed on 160 m band. We worked him for a new one, along with everyone else. This was indication that CT3 is not all that rare and we wanted to decide what to do next morning!

Since it seemed like Lou would be in Madeira for a while, we canceled our Madeira reservations and tickets. We managed to reserve the flights to Greece and Rhodos. Backup plans paid off! I should digress and mention that W9ZR had been planning to go with us. Unlike our XYL's, who only had to take off from work, his would have had to take off from kids and was unable to. We had licenses waiting for us in each spot. We kept checking the daily paper for the temperature in Athens and Nicosia, and figured SV5 would fall in between...like about 65 to 70 F. We packed clothing accordingly. One sweater apiece and a light jacket.

When we arrived in Athens, we were met by SV0AA holding our licenses with SV1JG, SV1IW, SV1PL and SV1DO. After they dropped us at a nice and inexpensive hotel, we were introduced to great Greek hospitality and food.

It was one hour flight to Rhodos the next morning. We had no reservations in Rhodos and no idea of what we would find on the island except for a few tourist flyers and their information. The SV gang said we would be lucky to find anything open, because it was too early in the year. We figured with over 50 hotels in the area of the capital city of Rhodes, something that met our requirements from a radio point of view would turn up. On arrival we rented a car that would hold all our gear and us and set off along the northwest coast towards the city. The Greeks were right. We were right on the beach all the way, and there were lots of hotels, including the tallest building on the island, 13 stories tall. They were all empty, without even anyone to cajole into letting us put up an antenna.

In the city, the big deal hotel with the casino in it was open, but only half so. They didn't seem too receptive to our strange requests. But the rooms looked very nice, and only $32 a double, off-season rate. They knew of nothing else open that was more than 2 stories tall. So we took off to look some more.

At the very tip of the city, surrounded on three sides by the ocean, and with no visible overhead power lines we found the Cactus Hotel, 7 stories tall, but it looked closed. The door was open however, and the owner-manager not only was happy to help us, but had worked with the VOA station on Rhodes, and had an idea of what ham radio was. He gave us the run of the 300 room place and the roof. We picked two rooms, one for radio, one for sleep, and began to make an inverted vee from the 600 feet of copperweld wire we had. This was strung from the railing on the roof, down to the beach, facing Western Europe and North America. By sunset we all had windburn from the constant offshore winds and temperatures in the 40's.

The first signal heard was UG6GAW, way before sunset, 50dB over S9. The telephone link on 1.820 was also strong, and a concern. The 160 m station consisting of TS830 transceiver and MLA2500 amplifier (Tnx W1CF) was put on the air. The first QSO was F8VJ at 1700Z on 17 Feb. 85. We never did get up an receiving antenna, but installed Butternut vertical to be used for other HF bands. It was tied to the railing and it worked great with the same rig. We had an IC-745 along, and originally planned to have two stations in operation.

After the first freezing night at the Cactus Hotel, we gave up one of the $16 rooms for a nice warm one, back at the Deluxe Hotel. That move and the real deals on two fur coats in the old city market place helped to save our marriages! We worked shifts so we could be on all night, and then do the "tourist stuff" during the day. At least we had all the antique, ruined cities to ourselves. Anyone planning a trip to SV5 should go in September or October we were told. The hordes are gone but the WX is still bearable and things are open. We all used the K1MM's call to keep down the dupes. The chief at the VOA site is SV0AH and gives great tours. At the receiving site is W4FA. The only active local on 160 SV5OX was off the island. We thought about operating from SV9, but we found that W0PU was going to operate from there. We didn't want to go through the same search and all the moving again, with only one week at hand.

We noted that W8JI had the best North American signal. We were W8LRL's country #199 and VK6HD's #100. No JA stations were worked, but we tried moving them from 40 to 80 to 160. First night we were heard by W0ZV and W6s as we found out the next day, but propagation was never as good as the first night. When the telephone link was operational on 1820, the band was wiped out. We had to call CQ till it stopped to keep the frequency clear. It must have sounded weird to those who were calling! I never knew there were so many Russians active on 160. We also worked TA1MX. (Box 28 in Istanbul. Is he any good?)

Breakdown of 160 Meter QSO's: Europe - 545 (67%), North America - 221 (27%), Asia - 40 (5%), Africa - 4, South America - 2, Oceania - 1 (VK6HD), 813 total.

Meanwhile, back home at K1MEM, after breaking 150 countries worked, I've lost my affection for QRN and the newer breed of inconsiderate operators on that band. This spring was spent putting up two phased quarter wave verticals for 80 meters in my wetlands, before the bugs and wet got bad.

(VE3INQ Canadian Top Band News)

HIGH CLAIMED SCORES ARRL 160 METER

Billy Lunt, KR1R

SINGLE OPERATOR

CALL	SCORE	QSO	MULT
N5DU	232,024	796	92
K5NA	207,264	920	102
K1ZM	194,324	848	101
N4PN	179,124	915	92
W1CF (WA2SPL)	161,100	806	90
K4VX/0 (KM9P)	140,630	828	82
AA4S	135,450	738	86
WB8JBM (KW8N)	135,372	733	87
WA8MAZ	120,666	745	78
N4KG	118,766	641	86
N2MM	114,426	703	78
K4FU	110,600	682	79
W8TU	110,495	704	77
KC5DX	109,575	717	75
W8FN	105,145	584	85
W0JX	100,548	654	76
WB1GQR	97,980	657	71
N5JB	96,558	597	77
N0SM	93,862	655	71
KF9D	93,600	612	75

MULTI OPERATOR

AA1K	202,500	933	100
W8JI	181,170	869	99
KS8S	172,304	926	89
W9RE	171,780	994	84
W8LT	142,641	858	81
W7FG	142,641	854	81
W0AIH/9	140,250	926	75
WM4T	135,756	805	81
K9RS	134,596	872	76
W9AZ	120,659	767	77

HIGH CLAIMED SCORES ARRL 10 M CONTEST

MIXED CATEGORY

CALL	SCORE	QSO	MPL	SEC
WC4E,	308,800	1523	80	NFL
NU4Y	270,450	1389	75	NFL
N2RM	235,500	1169	75	SNJ
N4ZC(WA8MAZ)	185,400	1011	75	NC
N5JJ	137,472	698	64	STX
N5UD	137,456	795	71	NTX
KM1H	135,450	746	63	NH
K3ZJ	125,692	833	67	MDC
K1VUT	119,536	707	62	EMA
W7EJ	96,287	612	73	OR
KQ1V	92,748	669	59	EMA
WI4R	92,400	601	56	GA
WB7FDQ	87,000	478	75	AZ
KC5CP	86,194	605	71	STX
W9XT	84,672	543	56	WI
ZS6USA	83,376	426	72	ZS6
N6HC	79,430	516	65	LAX
AA4M	77,966	448	62	SDG
K3EW	74,816	445	56	ENY
KE1C	73,728	382	72	CT

PHONE

KE5FI	270,048	1392	97	STX
NR5M	263,488	1432	92	STX
KE5JA	162,180	954	85	STX
CE3BFZ	154,800	900	86	CE
K4JPD	148,896	1034	72	GA
W9OEH	144,744	978	74	IN
K5FUV	123,970	805	77	AR
AA4JI	100,168	659	76	NFL
K1IU	94,080	735	64	RI
W0XK	93,240	630	74	MO
N2BJ	81,120	624	65	ENY
W1WEF	79,800	700	57	CT
K7IDX	75,504	572	66	WA
WB5SKQ	74,328	652	57	LA
AA4LE	72,618	637	57	AL
PP2ZDD	68,408	503	68	PY
N4BSN	67,662	537	63	TN
ZL1ANJ	63,512	467	68	ZL
W2FCR	62,272	556	56	NNJ
K8XR	60,634	497	61	SNJ

CW

KZ5M	198,268	675	73	STX
N4BP	115,168	472	61	SFL
N4VZ	112,896	441	64	GA
K6HNZ	100,344	678	74	SCV
KN4B	100,064	424	59	GA
WD4AHZ	96,672	411	57	SFL
K7QQ	95,760	399	60	WA
W5HUQ	58,600	293	50	NFL
KU2Q	52,400	259	50	ENY
W9VA	46,736	253	46	IL
KN0V	45,936	261	44	MN
W9WAQ	43,680	210	52	WI
NJ5N	40,964	209	49	NTX
W6KZV/7	37,260	200	45	WA
KB9S	37,036	197	47	WI
WA4QBX	36,960	215	42	AL
K4BAI	35,948	209	43	GA
NI8L	33,120	184	45	IN
VE3KP	33,120	184	45	ON
KV1L	32,528	208	38	EMA

MULTI

K5LZO	339,528	1531	94	STX
WOAIH/9	209,020	1124	70	WI
K5RVK	208,980	1041	81	STX
W4WWW	182,754	1156	71	SFL
N4EJW	151,996	766	74	SFL
N2EOC	132,864	846	64	NNJ
KB4HF	113,540	1622	70	SFL
KE7C	80,160	474	60	WA
KA5DLM	78,520	604	65	LA
WD5ABC	76,038	434	57	NTX
WB8BUQ	75,480	560	60	MI
KC0AT	75,344	478	68	CO
KF4YH	68,900	418	65	VA
N8APA	67,588	554	61	WV
KP4BO	65,514	461	61	KP4
WA2JQK	59,800	407	52	ENY
WD4CRG	50,976	432	59	KY
W3KHQ	48,450	353	57	WPA
VE7RON	47,040	420	56	BC
KI6T	39,538	297	53	SV

ARRL SWEEPSTAKES HIGH CLAIMED SCORES

CW - SINGLE OPERATOR

CALL	SCORE	QSO	MT
K6LL	174936	1182	74
K4VX	172864	1168	74
N5JJ	172568	1166	74
W5WMU	170940	1155	74
KY7M	170052	1149	74
K5LZO	168276	1137	74
W6AQ	167388	1131	74
K5GO	166500	1125	74
WA7NIN	166204	1123	74
K5GN	165760	1120	74
N5AU	163392	1104	74
N5DU	162948	1101	74
N6TR/7	162356	1097	74
W3LPL	162060	1095	74
N6RO	161468	1091	74
N4WW	161320	1090	74
K7OX	160016	1096	73
K5MM/7	159544	1078	74
K6NA	158656	1072	74
K4JPD	157768	1066	74
K5ZD/1	156880	1060	74
W2RQ	154956	1047	74
N8II	154906	1061	73
K1ZM	153328	1036	74
N6OP	153300	1050	73
N6NF	150812	1019	74
K4BAI	150664	1018	74
K5MR	150368	1016	74
N4BP	149650	1025	73
W1WEF	149184	1008	74
WC6H	146584	1004	73
VE7CC	146224	988	74
K3ZO	146000	1000	73
KB7G	144300	975	74
N0GA	143708	971	74
K7QD	142560	990	72
KM0L	141636	957	74
KF0H	139120	940	74
KC0D	137344	928	74

CW - MULTI OPERATOR

AA5B	162504	1098	74
KJ9D	161616	1092	74
N5CG	153180	1035	74
WOAIH	145336	982	74
K7LXC	144300	975	74
N4KG	140896	952	74
K5RR	139564	943	74
N0IN	134620	915	74
KE7C	131572	889	74
K0WA	129210	885	73
W0AA	124172	839	74
K0VVY	119288	806	74
NW5E	113368	766	74
KS9O	102120	690	74
W8LT	99718	683	73
W2CXM	96768	672	72
W2OW	91494	663	69
KS1N	79660	569	70
KW2D	76896	534	72
W0EEE	74880	520	72
WA6FSF	72846	513	71
W8UMD	60852	461	66
W4RV	55760	410	68
KW2J	54648	396	69
K3WW	49580	335	74
KG9Z	45288	333	68
W1OP	42496	332	64
NI0U	42372	321	66
NE9U	40602	303	67
W7GV	39000	300	65
AF9M	33152	259	64
K1HI	31752	252	63
W0AK	26400	220	60
W1MX	24852	218	57
WA2UKP	24600	205	60
K2GQ	18354	161	57
KF4GZ	13892	151	46
N4JEO	12550	123	51
KB8FJ	11662	119	49
WN4KKN	5740	82	35

PHONE - SINGLE OPERATOR

WA7NIN	275872	1864	74
N6BV	271580	1835	74
N2IC	268916	1817	74
K6NA	265808	1796	74
K4VX	263736	1782	74
WS4Q	260480	1760	74
N5AU	256632	1734	74
WC6H	254708	1721	74
N5DU	253524	1713	74
NR5M	248640	1680	74
K5RR	240500	1625	74
K7OX	239908	1621	74
K5LZO	231916	1567	74
W1WEF	223036	1507	74
KY7M	223036	1507	74
K5RX	222888	1506	74
AC9C	218744	1478	74
K3ZO	217264	1468	74
KF0H	214304	1448	74
N4KG	211492	1429	74
K4XS	210386	1441	73

WA3PWL	209124	1413	74
N6BT	207200	1400	74
WB9HAD	206608	1396	74
WB1GQR	206312	1394	74
W3LPL	203648	1376	74
AI6V	199208	1346	74
K5GO	196840	1330	74
N7TT	194028	1311	74
KE5FI	193880	1310	74
N5DD	192696	1302	74
KI3L	190032	1284	74
N4EEB	187960	1270	74
K9ZO	186480	1260	74
N4ZC	185000	1250	74
K4BAI	182632	1234	74
AH2U	182336	1232	74
K5MR	176712	1194	74
KM1C	176564	1193	74
N6NF	175784	1204	73

PHONE - MUTLI OPERATOR

AA5B	262848	1776	74
N5KW	256484	1733	74
WB8JBM	255744	1728	74
KOGU	244792	1654	74
NK7U	234728	1586	74
KN6M/5	230584	1558	74
NIOE	225404	1523	74
N4WW	217412	1469	74
KK9V	213564	1443	74
KOVVV	199208	1346	74
K7LXC	196544	1328	74
W6BIP	195656	1322	74
KE7C	193288	1306	74
AB0S	190822	1307	73
K5QY	186442	1277	73
KA5W	184704	1248	74
W8SH	176860	1195	74
WOAIH/9	168128	1136	74
K5RVX	165272	1132	73
W3GNQ	162800	1100	74
K5NA	161764	1093	74
WB8JKR	158360	1070	74
K6SG	155252	1049	74
W5EW	155104	1048	74
KB9S	150380	1030	73
NW5E	148296	1002	74
KF6OG	147752	1012	73
W9YT	147312	1023	72
WOQQQ	146372	989	74
NC9L	141636	957	74
WA2UKP	140160	960	73
K5GB	136800	950	72
KC4DY	123840	860	72
W8UM	122494	839	73
W2OW	119880	810	74
KOVVY	119088	827	72
W6JTI	116476	787	74
NODDS	113664	768	74
WOEEE	111024	771	72
WB6YPX	110704	748	74

1985 CQ WPX SSB RESULTS

SINGLE OPERATOR		MULTI OPERATOR	
EA9IE	8744508	KD7P/NH4	10484712
AI7V/NH6	6677500	IO5NPH	9504126
N2BA/VP2M	5626512	LZ2KTS	9489510
KI6P	4483792	NP4CC	7771713
CG3IY	4437293	AH2U	7576045
AH8A	4284536	VK9XB	6539040
CG5RA	3750521	OH8AA	6460344
YT3M	3546244	RL8PYL	6049350
CT1BCM	3262808	HG5A	5953426
CG3CRG	3009270	UP1BZZ	5855072
D44BC	2988545	HG9R	5430470
CG3XN	2937504	ED8RCT	5382780
TR1G	2873938	GB2PX	4967865
VP2MBA	2830999	HG6N	4956000

QRP

4X6IF	A	527136	YU1NR	14	106920
UP2BIM	A	408152	JK1RJQ	7	4030
4M7P	28	18942	OK1AIL	3.5	2380
NP4KA	21	544808	RA3DKE	1.8	10384

SINGLE OPERATOR - SINGLE BAND

28 MHz		21MHz	
LU1E	907128	LU2DFR	5364483
VK8XX	476710	CE6EZ	3576551
YV6BTF	198990	LU4LAV	2654106
LU1VK	51520	YCODNK	2079090
ZS6CDJ	45962	YCODPO	2012400
JH1VTF	19404	ZL1ANJ	1753825
JO1CRA	13300	ZY5BI	1481935

14 MHz		7 MHz	
VP2EC	5011668	CZ3BMV	3397962
G3FXB	3390363	VF1CV	3384648
KG1E	2906676	FM5CD	3163156
OK3CSC	2857755	OH1MA/CT3	2775020
GW4BLE	2697634	TE1W	2037752
C44LP	2467634	OH2KI/ZB2	1954210
N2AA	2373735	YU3EY	1539456

3.5 MHz		1.8 MHz	
OH1RY/CT3	2816754	CG3MFA	319140
CZ3XO	1329840	EA8AFS	282048
KQ2M	1247906	VE3OME	162798
HA8IE	639744	K5UR	122664
YV6CAX	610844	RA9AKM	79074
EA8ANT	539184	YU3MM	79074
OH2JA	501696	KG4W	74112

MULTI OPERATOR - MULTI TRANSMITTER

KH6XX	24898239	CTOBI	5286120
ZZ5EG	19121792	NF5I	4698360
WL7E	11639033	NM5L	4568232
IO3MAU	11216183	VE7ZZZ	4149428
KL7IRT	8446100	JA7YFJ	3977820
GB4ANT	6848424	L2X	3700236
JA9YBA	6819066	I2MQP	2703578

CQ WPX SSB WORLD RECORD HOLDERS

1.8 MHz	CG3MFA	319140	85
3.5	OH1RY/CT3	2816754	85
7	CZ3BMV	3397962	85
14	VP2EC	5011668	85
21	HC9A	6025770	81
28	CE6EZ	5437936	84
AB	EA9IE	8744508	85
QRP	H44R	1575904	84
MS	VP2EC	15238880	83
MM	KH6XX	24898239	85
CLUB	YU DX CL.	41003768	81
WPX	ZZ5EG	992	85

CQ WPX SSB USA RECORD HOLDERS

1.8 MHz	K5UR	122664	85
3.5	KQ2M	1247906	85
7	KI6P	1158606	84
14	KG1E	2906676	85
21	AI7B	4151232	82
28	N5AU	3094249	82
AB	KI6P	4483792	85
MS	N5AU	6301977	84
MM	AI6V	12529608	81

CQ WPX SSB CANADIAN RECORD HOLDERS

1.8 MHz	CG3MFA	319140	85
3.5	CZ3XO	1329840	85
7	CZ3BMV	3397962	85
14	VE3BMV	2332400	83
21	VE3BMV	3690450	82
28	VE3BMV	2796255	80
AB	VE6OU	5253399	82
QRP	VE3KZ	507210	79
MS	VE1DXA	8272704	82
MM	CK7WJ	16545370	79

CQ 160 m contest was a very succesfull one. It should bring some record scores. W1CF station operated by WA2SPL made 1084 contacts, 121 multipliers (about 60 countries) worked 257 DX contacts and 65 North Americans. All this with four 48 foot short verticals.

CG3MFA made the world record in 85 WPX SSB contest using shunt fed tower!

QSL INFO

AP2SQ	-W3HNK	JY5CI	-G4WFZ
AP2TN	-W8QFR	JY8FH	-G4BWP
AP2ZA	-W6NLC	JY9RL	-WA6POZ
AH8A	-W6OSP	JY9BV	-G5VS
A22BW	-DK3KD	J28EI/S	-FC1JEN
A22CA	-AK1E	J34PN	-N4PN
A22DP	-W7GVC	J37AH	-W2GHK
A25/W6KG	-YASME	J4CW	-SV8AL
A35AF	-K5BDX	J5WAD	-W6CNA
A35SA	-JM1MGP	J87A	-N4PN
A35ZH	-W6ZH	J87DX	-K1AR
A4XJQ	-G4MSX	J88AQ	-W2MIG
A4XZG	-G4XHZ	KH6JEB/ KH7	-KH6JEB
BT1BK	-JA1HGY		
BV2DA	-DL7FT	KH9/WK6T	-KG6KV
BV2FA	-DJ9ZB	KHØAC	-K7ZA
BVØBG	-W3USS	KHØ/NH6J	-JE1JKL
CE9AM	-CE3EEO	KX6/N6HR	-N6HR
CN8CC	-F6FNU	KP4BZ	-KZØC
CN8ES	-WA3NCP	L4D	-LU4DCK
CP6JX	-DK3HL	LX9BV	-DL7MAE
CR9EU	-G3PFS	LX/DK2OY	-DK2OY
CT3BZ	-OH2BH	LX/ON6CK	-ON6IJ
CU2CB	-N2DUR	OA4SS	-KB6J
CU2AK	-W3HNK	OD5BP	-DL1FZ
CT3/DF4GL	-DF4GL	OD5ZX	-I7AAP
CT3/DF4ZL	-DF4MZ	OHØBA	-OH2BAZ
CT3/DF8ZH	-DF8ZH	OHØXX	-OH2BBN
CT3/DL1RK	-DL1RK	OY/OZ3QN	-OZ3QN
CVØD	-CX1AA	PAØFM/P4	-W2NHZ
CVØU	-CX2CS	PJ2FR	-N6KT
CYØSAB	-VE1ASJ	PJ5/K6PVM	-XE2PG
C21FS	-K6EDV	PJ7A	-K1AR
C31LBL	-EA3DDP	PJ7DX	-K1AR
C53AA	-OH2BBM	PZ5JR	-K3BYV
C56/OH2BEN	-OH2BEN	P29PNG	-P29JS
C56/OH1RY	-OH1RY	P4/KQ2M	-KQ2M
C6A/W5WMU	-W5WMU	P44B	-N2MM
DJ1US/ST2	-DF2RG	P48K	-I8MPO
DX1N	-JJ3FMP	P49Z	-W8ZF
DX9C	-DU9RG	ST2/WA4BWB	-WA4BWB
D68DX	-PAØGMM	SU/9Y4RD	-KA2DDJ
EA6/OH2LP	-OH2LP	SV1RP/SV7	-SV1NA
EA9NW	-EA4BGL	DL1FZ/SV9	-DL1FZ
EA9RY	-EA9IR	S90AS	-IT9AZS
EC9IR	-EA9IR	TF3CW	-K1RH
EL2CJ	-JF2QHC	TF/AI5P	-W3HNK
FH/PAØGMM	-PAØGMM	TK5VN	-FC9VN
FK8CR	-F6EWK	TK/DL4FF	-DL4FF
FKØAW	-F6BFH	TK/FE5RV	-F5RV
FM5DK	-F6EQN	TL8CK	-F6EWM
FM5WD	-W3HNK	TN8EE	-F6ECX
FOØBRP	-WØJEE	TR8AHO	-DK1PO
FOØLG	-K6ANP	TR8DR	-W2PD
FP/W1CCN	-K1RH	TR8DX	-WA4VDE
FP/K1RH	-K1RH	TR8IG	-N6CW
FT8XA	-F6FYD	TR8SA	-F6FNU
FT8XB	-F1FLN	TT8/N7DF	-KØHGW
FT8YA	-FE6DZU	TU2JT	-F6CXV
FY5YE	-K5VT(CQ WW	TU4BR	-KN4F
FY5YE	-W5JLU	TV6CEE	-F2VS
GDØAVF	-W2KN	TZ6BO	-DL1SBO
GJ6UW	-G3XTT	TZ6FE	-DL4BC
HBØ/DL8EAQ	-DL8EAQ	TZ6FIC	-F6CRS
HBØAON	-DJ2YE	TZ6WC	-DL4BC
HBØNL	-HB9NL	T3ØAT	-G4GED
HC8X	-K8CW	T32AB	-N7YL
HC8/KP2A	-N6CW	T32AF	-KH6UR
HC8/N2IC	-N2IC	T77F	-I2WWW
HC8/K8CW	-K8CW	VK2EEJ	-WØJEE
HC8/AB8K	-AB8K	VK2EVP/LH	-JJ3PRT
HC8/NE8Z	-K8LGJ	VK9NM/LH	-DJ5CQ
HC8/K9AJ	-K9AJ	VK9ZB	-VK6YL
HC8/WØRLX	-WØRLX	VKØAQ	-VK5LP
HI8LC	-W2KF	VKØML	-VK5ABB
HIØJR	-HI3JR	VP2EC	-N5AU
HKØBKX	-WB9NUL	VP2ET	-K5RX
HP1XHY	-JA1LW	VP2MEV	-AJ6V
HW4PA	-FD6IWD	VP2MO	-WB2LCH
H5AY	-ZS4NS	VP2MSS	-KN3P
H5AYB	-ZS6BCR	VP2MU	-WA6AHF
JTØAPE	-UZ3AZO	VP2MW	-WA6AHF
JTØDJT	-I8YGZ	VP2VCQ	-N6ZZ
JTØEC	-UA3EC		
JW5E	-LA5NM		
JWØA	-SP2HMT		
JWØP	-SP2HMT		

(SCDXC BULLETIN)

AFRICAN NOTES

Sam Ford, ZS6BRZ

A distinguished couple arrived in Johannesburg in mid-October on an extensive DXpedition of Southern Africa - Lloyd and Iris Colvin, W6KG and W6QL have planned operations from 7P, 3D6 and A2. They also hope to operate from 9J, 7Q and C9 (yes! 7Q and C9 is a possible on their list!!) During the CQ World Wide Phone Contest they operated from the ZS6TJ Johannesburg Branch Clubhouse under their own call ZS6. In the weeks prior to the CQ WW CW Test they publicized their operation from ZS3. During the CW Contest their call was ZS3/W6KG - a first time that the ZS3 prefix was used as a prefix instead of a suffix for a portable station - and confusion reigned with a lot of operators getting the call incorrect!!

3D6DX was again in the CQ WW DX Phone Contest with Graham 3D6BQ and Sam ZS6BRZ operation a multi-single station atop a repeater site just outside of the Capital, Mbabane. Over 2000 contacts were made in the 20, 15 and 10 m Bands but we fared poorly on the 40, 80 and 160 m Bands. Initially a Vee beam was planned for 40 m using at least 3 wavelengths per leg but we struck snags due to the uneven terrain on the mountain top, where at certain places the legs of the antenna were at ground height and matching was very difficult to achieve. By the second day we had to scrub the idea of working on the Vee beam and hurriedly constructed an inverted vee dipole to work for the rest of the evening - we were hoping to make big scores on 40 m but Mr. Murphy had to prove that antenna theory was just a theory and doesn't always work in practice!

On 80 m we had a Delta-loop - wow, what a size - even for a mountain top! Here again, we had our unforeseen problems... In our enthusiasm to erect the most suitable antenna for the location, we worked out the length of the 75-ohm transformer section in meters instead of in feet! Logic and sound reasoning just does not work when everything needed for the contest has to be transported over very rough and rocky terrain in a bumpy 4X4 - definitely no route for an RV or a camper. The result of our folly was a poor performance on 80 m where we had hoped to get at least 500-plus QSO's. On 160 m we managed a beautiful dipole but because there were only two of us trudging all over the mountainside erecting the antennas, during each of our shifts when 160 opened, we were too pooped to catch it...sounds like excuses, but Experience is an expensive teacher with high penalties - plan ahead and get enough rest. Even the stout-hearted would have cried for us.

For the three days we were up there, we lived on canned foods and warm coke except for Sunday when we had a small barbecue from meat stored in a small cooler box. Our sleeping quarters was the back of the 4X4 and naturally we took turns at operating and sleeping. Power was taken from the repeater station although we had a generator just in case... In the day, although the sun was bright and strong, there was always a cool breeze blowing but we could walk around shirtless - and got severely sunburned! As deceptive as the days were, the night temperatures would drop sharply and two or more layers of clothing were worn. We were fortunate that no rainstorms occurred while we were up there but two days previously there were drizzles which made the 'paths' slippery. I am told that during a thunderstorm there are balls of lightning which travel over the surface of the mountain top. One witness reports of having seen balls of fire "like St. Elmo's Fire" moving slowly after a person, and if the person were to run, the ball of fire would move equally as fast! (Heaven forbid that they should collide!) I concluded that this was probably ionized gas which would follow in the field of the person moving about or occupying the "space" vacated by the moving object. Any theories?

Since September the bands have been showing steady improvement over here but 10 m is still somewhat disappointing. Both 40 and 80 have been fairly active but there is a noticeable rise in the level of noise as summer approaches. DK9KX/S9 has been active on 40 m around 2230Z on 7.042 and on 20 m about 1930Z on 14.195. 5T5SL was worked on 14.276 at 1752Z. OM Lothar's QSL is via DL8DF. Other stations that have been active are S79WHW OM Ken whose home call is NK6F (20 m); J88AO OM Ken whose QSL info is KA1ILA; J52UAG, OM Joe in Guinea Bissau whose QSL route is YU1AHI; 6W1OZ, OM Moussa, QSL to P.O. Box 971 Dakar, Senegal. From the Australian Antarctic Base, OM David operates under the calls VK0DJ and the special prefix of VI0DJ to commemorate the 80th year of the Wireless Institute. His QSL is c/o Gwen Thison, 3 Gould Court, Mount Waverley, 3149. These were all 20 m contacts.

Over here, we do have municipal bylaws and regulations governing antenna height. No plans are required if towers are forty feet (twelve meters) or under. An odd few operators go up to eighty or ninety feet (26 meters) after applying for the necessary permission which entails a tremendous amount of red tape, e.g. submission of building plans, an engineer's drawing of the plans for the tower, the type of metal used, an engineer's report of the type of welding to be used as well as the type of structure (lattice-type or windmill-type), a site plan of where the structure is to be erected in relation to the dwelling and whether it is free standing or is guyed. Doubtless to say, the final costs are quite high.

A very small handful are fortunate enough to have towers of 149 - 150 feet out in the countryside where no bylaws hamper them. One such fortunate should is OM Peter ZS4PB who has been often heard on 40 m and 80 m with a LOUD signal using Delta Loops from 160 foot towers! Peter, however, is very much a DXer and not a Contester. Someone who does take part in occasional contest "to give away points" is OM Dave Larsen ZS6DN who often works split on 40 m or 80 m. He also comes up on 160 m with block-buster signals...he has a ten-acre farm where he has 'rhombics for Africa!' - a place I call the 'funny farm' because he has men in white coats carrying out experiments in industrial electronics, akin to James Bond movies.

Another operator who I have not heard on the air but whose exploits I have heard of is Bert Lausecker, ZS5LB. In his own quiet way OM Bert has achieved 5BDXCC which, he says, took him almost a lifetime! His secret, according to him, is to be on the bands whilst the others are still sleeping! Heck! It makes you think that one can't even blink before something gets snatched from under your nose! The lesson I learn here is that one has to watch those openings during the contests and jump in with both feet.

Known to many old-timers is Bill Williams, ZS6DW who used to live on a four-acre farm near the Kyalami Race Track where he ran phased verticals on 80 m and a two-element delta on 40m. Bill, now 82, has moved into a condominium next to his daughter and advises that he will be putting up a Butternut Vertical soon.

Finally, John McCoy, (now silent key - August 1985) ZS6JM ex ZS5JM, had a tribander on the eleventh story of an apartment block with sloper vees on 40 m and 80m. Former winner of many CQ WW CW Contests in the late 50's and early 60's, John never suffered from TVI!...he was a tech for ZS6DN.

Another giant in DX-ing...heard more often in contests than plain rag-chewing is OM Greg Smith, ZS6BPL whose multi-singles always feature high in the scores for Africa. Despite most of his equipment being home-brew, and that includes an HF linear amp and multi-element yagis, he puts out a potent signal from a 70 foot windmill-type tower...and that is from a third-of-an-acre piece of ground! Incidentally, his antennas resemble the Razor Beam, being quad driven elements with a quad reflector and yagi directors. In a future article I hope to be able to feature OM Greg in a picture-profile and elucidate on his experiments and efforts.

Finally, an indication of the band conditions experienced in Southern Africa: there have been brief openings on 10 m, mostly into Europe. 15 m has provided some early afternoon contacts but some Stateside contacts have been made up till 1700Z. Early afternoon contacts from about 1200Z to 1600Z have yielded 3Y1, JW, ZL7 and 3D2 on 20m. A YN (Nicaragua) and a VO2 was reportedly heard on 20 m after 1900 by a local operator. In the closing week of December a string of Central American stations were heard and worked on 40 m between 0100Z to 0300Z, among them YV5BYT, HK1FGE, HI8RFB, HK0HEU (from San Andres Is.), 9Y4CK, CM6DD and HC5KA...proof enough that 40 m is still there! Regrettably, I have not had much success on 80 m due to the awkward situation of my antenna but hope to have this changed shortly. So, to all those out there, please look out for African stations on 40 and 80 m...we do exist!!

I spent a weekend down in Botswana (A2) and applied for a license...there is a great likelihood that I will be operating the WPX Contest from there under the call A25/ZS6BRZ I still have to write to the Botswana Amateur Radio Society (B.A.R.S.) to advise them as a matter of courtesy. I wonder if the Y2^s and the CN's will work me!! Last October from 3D6DX we worked BY0AA and when I asked him if he would take ZS6BRZ he came back with the reply that he had a problem with the transceiver and could not hear me--and that after giving 5924. Politics rearing its ugly head in sports?

Very best 73 and God Bless, ZS6BRZ

V3A BELIZE OPERATION

John Chass, WØJLC

Belize is a small Central American country located to the south of Mexico. It boasts a population of 145,000 of which 50% are under the age of 15. Until 1980, this was the British colony of British Honduras (VP1). The country has a total of only 8,866 square miles. Principal exports are sugar, wood, fish, bananas and beef. The average income per year is about $1,000 U.S.

Larry (KORWL) and myself had been planning for six months to reactivate the club call of V3A for the CQ WW CW contest in November of 85. After much preparation, we left Kansas City the morning of Nov. 20th. We flew from Kansas City to Houston where we met up with Jim Robb (W6OUL) and John Hilbish (W3UM) both of whom are full club members.

We boarded a TACA flight for Belize City, Belize. For the most part the trip down was uneventful. We did find out that in the entire back of the plane were illegal aliens being returned to Guatemala. One other small concern was the amount of excess luggage on the plane. We had four pieces per person plus two hand-carrys apiece. Everyone else had about the same plus a big boom box. Some passengers queried about our TS-830 boom boxes and when they found out they were a 100 watt unit...we had some instant offers. The plan shuddered deeply as it rose off the runway. We were glad it was able to lift the load.

We had planned for our arrival in Belize and customs was a breeze. We carried 19 bags and boxes through in less than five minutes. We then boarded a small Cesna single engine plane for the final 28 mile leg to San Pedro. San Pedro is one of the farthest spots east in Belize and gives a straight water shot to Europe and the U.S. While Ambergis Key is not a true island, most outward appearances is that it is. It is really connected to Mexico via miles and miles of ocean marshland.

San Pedro airport is a dirt and partial asphalt strip which cannot accommodate much more than a Cesna. We landed ten minutes past sunset and just had enough light to do so as the runway has no lights. Our host Ramon, V3ARN met us and we transferred all our equipment and bags to his resort. We got a 807, unpacked a pre-made 40 meter dipole we brought and had a station in operation within the first hour. Although the peak of the dipole was only 10 feet above ground, you'd have thought we had a two element beam by the calls we were receiving. We settled in to dinner, 807's and some leisurely operating. We used V3CAI and V3CAG as we were saving V3A for exclusive use in the contest.

We woke up bright eyed and bushy tailed the following morning and began the task of setting up the primary stations. Station one consisted of a TS-830, K.C. Keyer, 30L1, and MN2000 tuner. This was our rate station. For antennas, we brought a Cushcraft A3 for 10-15 & 20. For 40 and 80 we used a pair of Butternut HF2V's with a phasing arrangement. The second station consisted of another TS-830, AMP linear, K.C. Keyer and a Heathkit antenna tuner. The antennas were a TH-3 and dipoles for 40 and 80 plus a 130 ft. inverted "L" for 160. We used this aa our multiplier station except on 160 where it became our rate station.

Our resort was on the ocean, so salt water ground systems were available which greatly helped the operation of verticals and inverted L antennas. The soil was sandy and plenty of coconut trees are available. We did use metal support rods for the beams and rotators. Typically, the daytime temperature is 85 degrees while nighttime temp. runs in the high 60's. It took a lot of fluids (mostly 807's) to get us through the setup period. The mosquitoes and Bora Bora (a small plant with several spiked balls that stuck to anything and penetrated the skin like a needle) were the most hazardous to setup. In general, we had about everything operational on Thursday night. Reports from around the world were excellent on the final antennas as we tested them through the night Thursday. We finished up the final details on Friday morning and had about six hours to kill before the contest started. We took slides, did some touring or took naps while laying out our final strategy plans.

Having been to Belize before, we were familiar with the unusual propagation down there. Although we were due south of Chicago, our sunset time was the same as Kansas City. 40 Meters open to Europe at 2 p.m. with deep 40 coming on at 3 - 3:30 p.m. By deep, we mean UF6, 4X, Zone 18 etc. Subsequently, 40 will stay open to 10 - 10:30 in the morning nearly 4 1/2 hours after sunrise. We didn't feel 40 would be a problem so we decided to open on 20 and shift down. In the meantime, the multiplier station would clean up 40 where they could. 80 meter opens at 3:30 p.m. with little-to-no noise and goes deep at sunset (around 4:30 p.m. to Europe and becomes normal around 6:30 p.m.) We used these as guides to increase our multiplier share which had been a problem in our first trip.

We used a rotation system for the operators with each taking an hour of logging the rate station, operating the rate station, operating the multiplier station and finally an hour off. We used this for the first 24 hour period and modified it as operators needed it for the last 24 hour period.

We had some problems with our multiplier station amplifier but in general everything else held together with the TS-830's putting in another unmarred performance.

Our rough score was a little over 5 million points with. We had some very nice multipliers on every band. Probably 40 was our best band. We had the HF2V's phased a full 1/4 wave on 40 but a compromise 1/8 wave on 80. Another pleasant surprise was the 160 meter performance of the inverted "L" antenna. The countries worked and our signal into the U.S. surprised even us. Ten meters never did open to the states which disappointed us. We managed a few contacts on some very unusual paths with a W6, ZS, A2 and some South Americans. Considering the Solar Flux of 76 for the contest, we were all very pleased with the performance of the equipment and operators.

I can't say enough about our hosts and accommodations. The food was superb, the costs reasonable, the weather superb and the refreshments cold. San Pedro is famous for fishing and diving. When we left San Pedro at 8:30 a.m.
it was sunny and 78. When we arrived in Kansas City, it was snowing and 19 Brrrrrrr. On arriving home, I found 60 QSL cards on the desk. Mike, KDOFW is acting as QSL manager for V3A.

I'll be writing a few more articles on Belize operation. (KCDXC Bulletin)

1985 S. PACIFIC DXPEDITION

Ross Forbes, WB6GFJ

My initial interest in tiny tropical islands of the South Pacific began in the days when "Adventures in Paradise" was first on television. Later, I attended the University of Hawaii. When not working on my studies assigned by my physics professor, Katashi Nose, KH6IJ, books on the history of Polynesia continued to interest me. In my spare time at University of Hawaii, I used to go down to the Ali Wai Yacht Harbor and listen to KH6AX recount stories about his sailing experiences around Tahiti, Huehine, Raiatea and Bora Bora. Finally, in 1978 I had my first opportunity to visit one of these islands and have been going annually ever since.

My first stop is always on the island of Tahiti. French Polynesia is the official name of this spacious region however, most of us refer to the country by the name of the main island, Tahiti. It is located at 17.3 degrees south latitude and 149.3 degrees west longitude. Papeete is the capital city and is ten hours behind Universal Time. Customs and immigration formalities are minimal, but Amateur Radio operators should be prepared to declare their HF equipment. Have the serial number, make, model and cost available to complete a form and you will be on your way.

Faaa Airport, two miles from downtown Papeete, provides international facilities to the major Pacific air carriers. While it isn't the busiest airport, one can get into and out of Tahiti on most days of the week. Arrival times in Tahiti are usually very late at night, or very early in the morning. Therefore, it is normal to hear two or three jumbo jets arriving between two and five in the morning. Regular service between islands of French Polynesia happens during the day with F-27 type aircraft.

The official languages are French and Tahitian. However, visitors will find English spoken around the hotels and most other areas you would visit. The climate is very tropical, with the Tahitian summer (December to February) being the wettest and most humid. Personally, I enjoy the Tahitian winter (July to September) with the cool evenings, warm days and very little rain.

In 1985, I left San Francisco in late June for my annual visit to the South Pacific. N5DD/FOOASJ was with me in Tahiti during late June and early July. Richard, FO8HL, was my host on the island. FO8HL's QTH is on the edge of a beautiful black sand beach near Matavai Bay on the north side of Tahiti. The rig included a TR-2600A for the local repeater, TS-820S, TS-430S, AS-33 triband yagi up 25 meters (75 feet), 40 meter dipole and a 75 meter delta loop. During the IARU Radiosport, I was active with my Tahitian call FOOFB on 75 through 10 meters.

Obtaining an Amateur Radio license in Tahiti is no problem. However, it is very important to apply four to six months prior to arriving. There is no charge for the license and your FOO call is valid for three months. The callsign structure in Tahiti is going through some changes and effective July, 1986, there will be a new prefix on the bands.

Currently, the FO1 prefix is granted to VHF licensees only. The FO8 callsign is granted to the full licensees who are residents. The present FO8 calls will probably change just the number while retaining the regular suffix. As of July 1986, the FO8 call will become FO4 or FO5. The latest word is that visitors will retain the FOO calls. There is no "portable" operation permitted in French Polynesia. You either have an FO call sign to use at different locations or you don't operate.

The population of French Polynesia is around 170,000 with almost 50,000 living on the island of Tahiti. When the biggest celebration of the year, called the Tiurai, arrives in July, those living on the outer islands head for the activities in Papeete.

Last July, the fourth "South Pacific Arts Festival" took place in French Polynesia and this brought cultural delegations from each island country to Papeete. Visiting from Nauru were C21BD and C21RK. Each country presented song and dance exhibitions, with daily arts, crafts and cultural demonstrations. 1985 also was the first anniversary of the "Internal Autonomy Government." Additionally, the annual July celebration of Tahitian cultural and sporting competitions (the Tiurai) was also in full operation. This included nightly dance competitions where each island had their best dance group demonstrate the very famous, erotic and enchanting Tahitian dance.

During my stay in Tahiti, there was excellent propagation (except for the occasional solar flare) on all bands. Yes, even 10 meters was open to all parts of North America around 2100Z even though no beacons on this band could be heard! 20 meters produced very good signal over the North Pole form Europe around 0400Z and provided contacts for 2 hours. The NCDXF beacons on 14.1 MHz provide excellent assistance with propagation. this was my first visit where I found all parts of North America came into Tahiti with strong signals. It was typical for every signal in a pile-up to be well over S-9 on a TS820S! Except when a band was just opening or closing, the W1's and W2's were just as loud as the W6's and W7's. 75 meters provided many contacts all over North and South America, Japan and of course the Pacific basin. Best of all there is NO static on 75 meters in Tahiti.

The 40 and 75 meter bands present a slight problem to FO8 stations. The local TV station (RFO) transmits very low power (less than 50 watts) so most neighborhoods are subject to TVI when someone is on the air. Therefore, most just avoid operating on 40 or 75 meters between the hours of 0200 and 0700 UTC. In addition to TVI, the neighborhood TV sets also create an S-9 signal all over the 75 meter band making listening very difficult.

Once the TV station goes off the air around 0700 UTC, the 75 and 160 meter bands as well as the regular broadcast band become quiet and static free. Imagine yourself sitting on the edge of a quiet lagoon with a full moon shining, listening to broadcast stations form all over U.S., Australia and New Zealand! RFO is the call of the broadcast center in Papeete; the same station broadcasts on

FM, AM and the international shortwave frequencies. Here, in the states, look for Radio Tahiti on 15.170 and 11.825 MHz.

Many friends made my visit most memorable. The Amateur Radio operators who were constant companions include FO8HL, FO8GW, FO8HT, FO8KB, FO8CX and FO8AG. To all my friends in Tahiti I say, "Maururu Roa!"

On July 30, I arrived on the island of Rarotonga in the South Cook Islands. My reservation wa son the same plane as the President of French Polynesia and the Tahitian sports team traveling to the South Pacific Mini Games. The games are styled along the lines of the Olympics, however, participation is limited to South Pacific island nations. The flight from Papeete to Rarotonga occurs only two days each week and takes 90 minutes. On Rarotonga I was the guest of Victor, ZK1CG, and his wife Marsha. My call was ZK1XE and my operation was only on 20 meter SSB. Victor's rig includes an IC-701, FL-2500, TH6-DXX and a Yaesu all mode 2 meter rig.. Since Victor is interested in Oscar-10, I carried a 2 meter circular polarized antenna, donated to ZK1CG by the Northern California DX Foundation.

Victor and Marsha used to operate from the Tiare Village Motel but moved about 3 miles to the west when the owner sold the motel. Victor and Archie, ZK1CT, produced a 45 minute VHS video tape that shows what life on Rarotonga and the island of Mauke is like, along with introducing many of the Amateur Radio Operators on Rarotonga. Even the Prime Minister of the Cook Islands, Sir Thomas Davis, is a licensed Amateur Radio Operator! This video tape is in the library of the Northern California DX Foundation. For those wishing to see the tape send an SASE to WB6ZUC for information on viewing the tape.

Obtaining an Amateur Radio license in the Cook Islands is no problem. Visitors are granted a ZK1X prefix and as each license isn't renewed, the call will be passed on to the next visiting Ham. The ZK1 license is valid for one year and costs $6.00 (N.Z.). You should apply about a month before your arrival date. Victor, ZK1CG, has always been faithful in helping secure a license for visiting hams. An interesting side note is that to rent a car in the Cook Islands, you must first obtain a Cook Islands drivers license! The cost is $1.00 (N.Z.) and is granted at the police station when you show them your regular U.S. drivers license. An International Drivers Permit is not recognized here.

August in the Cook Islands is the period when they celebrate their independence with the Constitution Days activities. Each evening, everyone gathers at Constitution Hall for Cook Island food and the dance competition. These competitions are to islanders what the Super Bowl is to the U.S.!

When not exploring the island in a car that Victor loaned me (you drive on the left side of the road here), I spent time on 20 meters, or assisted Victor and Tuatai, ZK1CY, in assembling their two meter antenna for OSCAR-10. Besides taking the antenna from the NCDXF, I left Victor a transverter for 435 MHz, some 9913 coax and information to get started operating on OSCAR-10. As soon as Victor gets his 435 antennas built, look for ZK1CG on OSCAR-10.

On August 4th, the 747 left Rarotonga at 4:00 A.M. and arrived in New Zealand after a three hour flight. Ron, ZL1AMM, the DX Editor for Break-In magazine, arranged a meeting of DXers in Auckland to see slides of the Clipperton Island DX-pedition I had with me. During each previous stop (FO and ZK), I had been in contact with John, ZL1AAS, who was kind enough to check with the New Zealand post office and confirm that my ZL0AKO call was waiting for me. This would allow me to operate over the weekend from John's home, and on two meters. After seeing John's QTH, I understand why he has one of the best signal on HF from New Zealand!

The ZL license was no problem to obtain. You can send the application prior to your arrival or upon appearing in person with a copy of you U.S. license at the Radio Inspectors office. In 1984 and 1985, there was no charge for a visitor and they were granted a ZL0 call to use. There are a number of repeaters through out New Zealand and a note to the N.Z.A.R.T., will produce a list of repeater frequencies. Operating on the New Zealand repeaters is truly a wonderful experience. After the continuously busy repeaters and occasional jammers in the U.S., ZL repeaters are relaxed, used with respect and polite, courteous operating is the rule of the game.

David, ZL1BZC, president of Branch 3 of the N.Z.A.R.T., provided a most enjoyable meeting at his home and then a visit to a regular meeting of their radio club. Another well known gentleman I enjoyed meeting was ZL1AGO. Ivor also has a location that provides him with the extra dB in the pile-ups. Finally, Roly, ZL1BQD, and his wife Gail, ZL1FV, were kind enough to fly me around the North Island of New Zealand and provide evening tea for my last evening. Roly and Gail also operate Southern Cross Electronics in Auckland, which is the ICOM representative for New Zealand. Everyone I met in New Zealand was most hospitable and I recommend the visit to everyone.

My next stop was Melbourne, Australia, where my call was VK3BZZ. Tony, VK3CE, Editor of Amateur Radio Action magazine and participant on the VK2LHI and VK9MR DXpeditions, provided many hours of good conversation about DX, DXpeditions and Amateur Radio in general. Tony is the current president of the Down Under DXer's Contest Club. Melbourne is also the headquarters of the Wireless Institute of Australia and the location of studios and offices of Radio Australia. Every Sunday, the WIA broadcast their weekly bulletins from a station showcases at the Natural Science Museum in downtown Melbourne.

An Amateur Radio Certificate is no trouble to obtain by a visitor. It can be requested prior to your arrival or upon a visit to the Radio Inspector. The cost of a license is $23.00 (Australian) per year. There are also many repeaters in each of the metropolitan areas on both two meters and 450 MHz. Recently, Dick Smith Electronics, an Australian electronics retail store, opened up here in the states and advertises in many Amateur Radio publications. They sell the Australia Callbook which provides a wealth of information on repeaters in Australia and New Zealand.

Leaving Melbourne, I flew to Sydney and enjoyed an afternoon with Les, VK2WU. He was also on the Lord Howe Island and Mellish Reef DXpeditions and assured me that all cards received have now been mailed out. If you haven't received your VK9MR card by now, drop VK2WU/3 a note and he can take care of you. We can look for Les to have a new call as he has moved to Melbourne (VK3), but will not have the room or excellent location he had near Sydney. Hence, VK2WU won't have the same signal in the coming contest season.

My final stop was Honolulu, so that I could re-adjust to the day and time change. While there, I met with a number of the Honolulu DX Club members including Pat, KH6DD, Joe, KH6GDR and Rick, KH6JEB, who had just returned from another visit to Kure Island and presented an excellent video of the island. Rick mentioned that as a result of his QSL Manager activities, he has a supply of IRCs. Send and SASE to Rick and he can give you information on his supply.

My last trips throughout the South Pacific were on Air New Zealand and like most airlines, they are very strict about what you carry on board the aircraft. With the exception of a jacket, everything must fit under the seat in front of you. My TS-430S, camera nd incidental things (ticket, passport, etc.) all fit there. However, there were many passengers who tried to carry all of their wordly possessions on board and ended up having to check most of them. If you plan on taking your radio, contact the airline well before your departure and discuss your situation with them. Security in each country was very courteous and business like when they saw the radios. However, due to the current world situation, it was normal for them to inspect each radio and carry-on luggage closely.

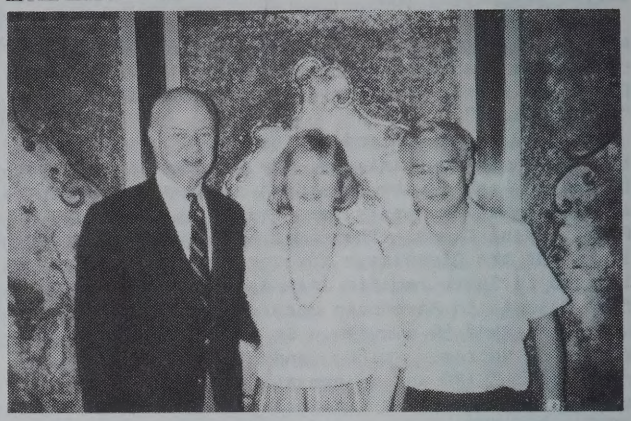
If traveling overseas is a possibility for you this year, be sure your passport is up to date and you have the necessary visas. However, if your plans include operating overseas, don't wait long. Start making your applications right now. Complete license information for each country is available from the Information Services Department at the ARRL. Don not leave your amateur radio license detail until the last minute; in the case of Tahiti, it takes about 5 months to have the license processed. In each country 2 meters is well established and an HT was important to have with the local operators. But a few Pacific countries such as Fiji, 3D2, still do not allow HTs.

My Tahitian friends and I are planning an "Amateur Radio Charter" again in 1986. Specific details are almost complete. Initial plans are for two weeks in French Polynesia around July 14th. One week will be on the island of Tahiti and the second week will be on the neighboring island of Moorea. The cost will include round-trip air fare from Los Angeles and hotel accommodations on the islands of Tahiti and Moorea. An HF rig will be provided and all charter participants who have applied for and receive their FOO license prior to departure from the U.S. will have access to the station. There will be time to operate during the IARU Radio Contest on July 12 and 13, and also to see many of the Tiurai activities mentioned earlier. If you are interested in joining the group, send and SASE to WB6GFJ at the address listed below and I will return details to you when they are firmed up. Should the plans be canceled, we will notify you with the SASE.

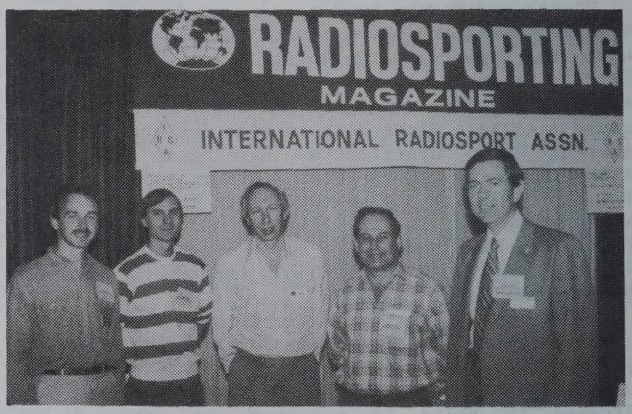
(Ross W. Forbes, WB6GFJ,
P.O. Box 1, Los Altos, CA 94023-0001)

IF YOU RECEIVED
RADIOSPORTING
AND ARE NOT
A SUBSCRIBER
IT WAS NO ACCIDENT!
PLEASE CONSIDER IT AN INVITATION TO JOIN

MEET...



Left to right: Ken Miller, K6IR; Sally, Ken's XYL and Tom Wong, VE7BC at Hong Kong discuss their visits to BY and expanding activities from China.



RADIOSPORTING is... where Big Guns and Little Pistols meet. Left to Right: George Balint, VE3MRN, (ex HG5A); Mike Spenuk, VE3JTQ; Martin Rosenthal, VE3MR; Ami Shami, 4X4DK and Bob Nash, VE3KZ.

Lee Sheridan, W6OKX (left) and Paul Newberry, N4PN "telling the lies" at the Sotheast DX Club dinner meeting in Atlanta. Lee is a long time DXer and contester who did it from both coasts. Paul is very active in contests, he was one of the famous VP2KC world record setting operation and he holds a number of world records as VP2KAA in CQ contests.

EFFECT OF QTH HEIGHT ON PROPAGATION

Mike Spenuk, VE3JTQ

In the early 1960's a group of scientists from the Radioscience Laboratory of Stanford University in California conducted a series of experiments to determine if there is any advantage in selecting a high receiving site over a low one on long distance HF radio signal reception. The following is a summary of a paper submitted to the journal "Radio Science" in February 1966 and published in July of that year describing the results of the experiment.

As well as determining whether high antennas perform better at the receiving end (as a function of transmitted frequency and time of day), a further purpose was to determine whether high transmitting and high receiving antennas made any significant advantage. Thirdly, to determine whether high antennas could compensate for the short periods of time of weak signal reception on the low antennas. Fourthly, to determine whether high antennas enable longer path openings over low antennas.

HF radio signals were transmitted over two separate 10,000 km temperate zone paths and were received over one-month periods at sea level and at elevated sites. Five frequencies ranging from 11.5 to 23.5 MHz were transmitted from Okinawa to Malta and one frequency was used from Puerto Rico to Hawaii. Signal strength measurements indicate that high antenna sites provide "definite advantages" over low sites for long distance communications.

The high antenna sites were on average 700 feet higher than the low sites and provided as much as 10 dB improvement in signal strength over the low sites. It was also found that the height advantage decreased with increase in frequency and that the higher sites were less susceptible to QSB. At the beginning and ending of the path openings, the high antennas provided the necessary requirements for a complete circuit. Up to one and a half hours more receiving time for a specific signal threshold was achieved using the high antennas. It should be noted that the ray paths involved in this experiment did not pass near the auroral zones.

The first series of experiments was performed in April 1962--coinciding with a minimum of sunspot activity (mean smoothed sunspot number was 33). Signals were transmitted from a high site at one radio frequency from Mayaguez, Puerto Rico and received at two receiving locations, one high and one low, near Waimanalo, on the east side of Oahu, Hawaii; a distance of 9,200 km.

For a two week period during April 1962 a 26 MHz signal (600 watts) was transmitted from near Mayaguez, Puerto Rico and received at two receiving sites near Waimanalo. The transmit antenna was a 3 element yagi mounted 30 feet high at a site about 1,000 feet above sea level. The land below the antenna sloped evenly to the sea. The receive antennas were 3 element beams mounted on 20 foot towers at 200 and 1,200 feet above sea level near the edge of a steep cliff.

The transmitting antennas for the Okinawa-Malta path consisted of three stacked rhombics, each designed for a different frequency band. Transmissions at 500 watts were made at 11.5, 12.3 and 20 MHz, plus a one hundred watt signal was transmitted at 23.5 MHz. The data on the rhombics was as follows: low frequency rhombic leg length was 137.0 m, height was 41.8 m, and tilt angle of 67 degrees; mid-frequency rhombic leg length was 134.5 m, height was 36.9 m, and tilt angle of 70 degrees; high frequency rhombic leg length was 132.2 m, height was 30.5 m and tilt angle of 73 degrees.

The receiving antennas were two similar sloping-Vee antennas with 300 foot legs, 30 degree apex angle and mounted on the side of a cliff near the middle of the island; apex of the antenna was at 725 feet and the ends were at 600 feet. Another antenna located at sea level near Valletta, on the northeast coast of Malta was also used. Both sites have a clear view in the direction of Okinawa.

Chart recordings were made from the receiver AGC outputs at all receiving sites and converted to digital data using an analog-to-digital converter. The data was key punched on cards and entered into an IBM 7090 for analysis. The reduced data revealed that for each of the five transmitted frequencies of the Okinawa-to-Malta path the high antenna always receives a signal of greater amplitude than the sea-level antenna for all but the 0800 to 1500 GMT period of the 11 MHz record. The difference between signal levels on the two antennas varies with time of day and frequency. "It is important to note the time of day when the high antenna has the greatest or nearly the maximum obtained signal-strength advantage over the sea-level antenna...is always immediately following the time of signal reappearance in the morning."

In the 14, 20, and 23 MHz frequencies, at MUF failure, there is an increase in actual reception time with the high antenna. However, the following characteristics were observed regarding the reception-time increase:

i. The circumstances associated with the receiving-time increase (RTI) are different in the morning from those at night. In the morning the RTI occurs because the signal of the sea-level antenna builds up at a slower rate than does that of the high antenna. At night, the RTI occurs because the high-antenna signal strength record in effect leads the sea-level record in time;

ii. The morning RTI is greater than evening RTI;

iii. The amount of RTI advantage decreases with increasing frequency.

The Puerto Rico to Hawaii path produced the same effects as observed in the Okinawa-Malta path. The greatest difference between the two receiving sites occurred just after morning signal fade-in.

The over-all outcome of the experiment produced the following observations.

First, the amount of signal strength advantage of the high versus sea-level antennas decreases with increasing frequency.

Second, the receiving antennas used have complex patterns, but the higher the antenna is above ground, the better the response to low-vertical angle radiation it will have over an antenna mounted closer to the ground for a given frequency. It is suggested that this is the reason for the better high-antenna response in this experiment.

Third, the morning fade-in period of the received signal is associated with rapid increase in electron density and a lowering of layer height in the direction of the transmitter. The tilt of this layer will change a higher-angle ray on an east-west path into a lower-angle ray. Large signal strength advantage with the high receiving antenna occurs immediately after the band opening in the morning because many of the high vertical angle rays that are not "reflected" by the tilted layer will penetrate the ionosphere on the western side of the tilt because of the lower electron densities encountered there. This advantage would decrease as the tilt moves west and passes over the receiving location. Further enhancement of lower-angle modes could be due to "ducting" of rays between the F2 and sporadic-E layer. The fade-out period is characterized by low and decreasing electron densities at the transmitter end and along the transmission path. This favors low vertical angle propagation.

The data from Puerto Rico-to-Hawaii path indicate that it is advantageous to use high antennas at the receiver and at the transmitter, thus favoring low angle propagation.

So it appears that high antenna sites provide advantage over low sites for long distance, east-west, low-latitude communication. The maximum advantage occurs during the morning "opening" of the path for all frequencies tested, but the advantage varies inversely with frequency. The link was maintained longer with the higher antennas; the received signal drops below a given threshold first at the low antenna site. (VE3JTQ)

(ref. "Comparison of Long-Distance HF Radio Signal Reception at High and Low Receiving Sites", M.R.Epstein et al., "Radio Science", Vol. 1 (new series) No.7, July, 1966, pp.751,762)

de VE3BMV:

Our thanks go to Jack Gelfand, K2BMI, for finding and sending the articles in response to my question about the experiences and effect of station site elevation on propagation of radio waves. I have raised this question in our earlier issues of *RADIOSPORTING* because it appeared to me that according to my conductive/refractive theory of propagation, there should be a significant benefit of having the QTH high up in the mountains, or better yet - in a baloon or an airplane. It also makes sense that the lower we go in the frequency, the more pronounced the effect should be.

The above study was done on frequencies above 11 MHz and with antennas having a limited vertical angle control. Nevertheless, there is an indication that the best location should be the one way up in the mountains, with a sloping terrain in the direction of the reception/transmission and a good conductivity ground. (The proverbial salt water lake on the top of a hill?)

We know that signals from an aircraft, flying over the area that is coming through, are quite a bit stronger than signals from the ground stations. Is there anyone who has operated on HF extensively from an airplane or a baloon?

The station, situated high in the mountains, should prove especially valuable on 80 and 160 meter bands. My next move from our city lot will definitely be in that direction.

Thanks also to Mike, VE3JTQ for digesting the material and writing the article. (VE3BMV)

LET THE GOOD TIMES ROLL

Some of you remember with fondness the PVRC meetings that took place in the Red Cross Building in Arlington. Meetings were fun, light-hearted spoofing and good-natured joshing were the rule, and attendance was heavy. Overflow crowds were common. Many members considered the PVRC meetings to be the highlight of their radio activity.

Later meetings at places such as the King's Park Library were also well attended. Many fine talks were heard, contest results were picked apart with pithy analysis, and we all learned a lot.

However, in recent years attendance has been down, enthusiasm seems to have waned except among a small group of members, and the PVRC has become a shadow of its former self.

Anyone who has been associated with other clubs knows that the life of organizations generally oscillates between hyperactivity and periods of quiescence just about like the sine waves all of us are generating when we are on the air.

Even more significant, amateur radio's demographics are changing. The PVRC is no longer infused with a continuous supply of enthusiastic youngsters from the hinterlands to replace members who leave the area, lose interest, or become silent keys. The youngster who at one time would have been a natural recruit for amateur radio at the age of 13 or 14 is now the quintessential computer hacker instead.

All of this having been said, it is the intention of your new officers to try to recapture some of the PVRC spirit of former years, and if you are reading this, it means that we are asking for your help in achieving this.

At the most recent meeting, it was voted unanimously that active members would be those who kept up to date in their dues or who participate in contests and contribute their scores to the PVRC club effort. We must continue to collect the minimal $10. annual dues in order to send out our monthly newsletter, support the PVRC, W4KFC, and W4BVV memorial awards in the CQ and ARRL contests, continue our own club awards, and pay our other normal expenses. But the financial burden of the Club repeater is no longer hanging over our heads, and therefore we will rely on the goodwill of our club members and their desire to continue the PVRC's activities.

We recognize that all of us are getting older and many no longer have the interest or stamina for a major contest effort. Your suggestions, your participation in meetings, your advice are nevertheless wanted. No matter how much contest techniques have changed since you were in your "prime," we want your ideas, your contributions, your remembrances, your anecdotes. We hope to call on some of your senior members to begin contributing to an aural or audiovisual PVRC history and for items for this newsletter.

PVRC is a contest club, and contests are our exclusive focus. We will strive to balance the various contest-related interests of our members - all our members. We seek the wisdom and knowledge of our long-time members as well as the enthusiasm and freshness of our newer members.

We want PVRC to be what you want it to be. If it isn't, please let us know, and let us know why, period.

The PVRC Officers:

Dave K3ZJ, Tom WA3TAI, Mike KC8C, & Fred K3ZO.

RADIATION ANGLE AND DX

Mike Spenuk, VE3JTQ

An experiment conducted during the 1950's observed the effects of antenna radiation angles on long distance communication paths. Observations were made using a 6,800 km path and a 8,400 km path (both paths propagating in the east-west orientation) running antennas having different vertical-plane radiation angles. The over-all outcome of the experiment indicates that low radiation angles are advantageous on long distance paths.

The paper by W.F. Utlaut (see reference) begins by mentioning two other experiments: one conducted in 1932 in which it was observed that low angle vertically and horizontally polarized signals were significantly stronger on paths between New Jersey and South America, and New Jersey and England. The other experiment conducted during the fall of 1941 on a path between Riverhead, N.Y. and Bolinas, California during daylight hours only, involved measuring the angle-of-arrival of the signals. The measurements revealed that a single, fixed antenna "will not give maximum performance through all seasons or times of day."

In this experiment, the Voice of America station in Munich, Germany was utilized as the signal source and receivers were located near Boulder, Colorado (path length of about 8400 km) and Sterling, Virginia (6800 km) using antennas having different heights and radiation angles.

The transmitting antennas at Munich consisted of two "not quite identical" rhombics; both were aimed on 295 degrees. The beam heading to Sterling is 297 degrees, but the bearing to Boulder is 316 degrees--21 degrees off the main lobe. It was further pointed out however, that each of the rhombics produced "strong side lobes in the direction of Boulder." From 0000 MST through 0700 MST antenna with designation 6E was used. It had maximum radiation at a vertical angle of 10.5 degrees on a heading of 295 degrees; the side lobe of 315 degrees had maximum radiation at a vertical angle of 12 degrees. Antenna 2W was used the remainder of the time. It had maximum radiation at angle 12 degrees on a bearing of 295 degrees and the 317 degree sidelobe had maximum radiation at 16 degrees. Antenna 2W was 1.1 dB stronger on the main lobe and antenna 6E was 2.9 dB stronger on the side lobe.

Five horizontal dipoles with a reflector (used to minimize the effects of signals reflected from nearby mountains) were used at the Boulder receiving site. Antenna heights ranged from 50 to 985 feet. The calculated first lobe elevation angles ranged from 15.6 to 0.7 degrees. At the Sterling receiving site three identical horizontal dipoles were installed at 50, 150, 312 feet on a single tower. Radiation angles were 15.6, 4.7 and 2.3 degrees, respectively. A double conversion heterodyne receiver with mechanical filters in the second IF for a bandwidth of 800 Hz was utilized. The AVC signal was used for the data collection.

EXPERIMENTAL RESULTS

Observing monthly median values of signal strength measurements at each receive location indicate that "no single radiation angle always provides [the best signal]," but there appears to be some dependence on the radiation angle at a given time.

At Boulder during March and April the lowest antenna provided the best signal for much of the time when operating below the MUF, but it provided the worst signal at other times of the day. However, during May and June the lowest antenna provided the lowest signal level throughout the entire day. It was also discovered that the greatest difference in signal levels between the antennas occurs during the late spring/early summer months.

When all of the collected data is plotted, irrespective of the time of day, the results indicate that for any percentage of time the lowest antenna has the weakest signal level and the signal level increases as the radiation angle decreases--to as much as 10 dB on the highest antenna. This is also true during the time when the predicted MUF was less than the operating frequency. It is interesting to further note that the transmitting antenna was radiating its maximum lobe at 12 to 16 degrees whereas the strongest receive signal was occurring, at times, with the high antenna which had a main lobe radiation angle at 0.7 degrees. The Munich to Sterling path tested from May through July, 1959 provided the following additional results. During periods when the predicted MUF was lower than the operating frequency the low radiation angle antennas received stronger signal levels than the high angle antennas. A noteworthy observation was that antennas 1S and 3S--corresponding to 50 and 312 feet at Sterling--and antennas 1B and 3B--50 and 310 feet at Boulder--have a "tendency toward a 5 dB difference in median signal level recorded" even though the path lengths differ by about 1600 km.

Signal fading rates were also compared to the antenna radiation angle. It was observed that for the most part "little difference in the fading rate of signals received on antennas with different radiation angles occurs."

During periods of magnetic storms it was observed that the low angle antenna radiation angles were advantageous. During the moderate intensity magnetic storm of June 11, 1959, signal measurements were recorded at Boulder. It was found that the lowest antennas had the most signal loss and for the longest period of time. The higher antennas suffered less signal loss and the effects of the storm lasted the least amount of time with them. This was observed at both receive locations.

SUMMARY OF THE FINDINGS

First, the surprising result that the low angle receive antenna performed better than the higher angle antennas considering that the transmit antenna had a high radiation angle. Because of this the following conclusion emerged: "the low-angle transmission mode is more efficient than the high-angle one." Second, there is no clear indication from the data collected in this experiment that angle of radiation has any effect on fade rate. Third, low angle radiation is advantageous during periods of ionospheric disturbance. However, it was

pointed out in the report that more data collection is necessary to positively verify this point. One additional result of this experiment indicated that increased absorption on traversing the auroral path occurred during the high magnetic activity. Also, the paths through the auroral zone are more prone to disruption during storm activity. Finally, it is recommended that low radiation angle antennas be utilized for long distance communications because of their apparent advantage. Further studies need to be done in order to determine the actual azimuthal direction of the incoming signal as well as its vertical angle. And whether using low radiation angle antennas at both the transmitter and receiver will make a significant difference.

(VE3JTQ)

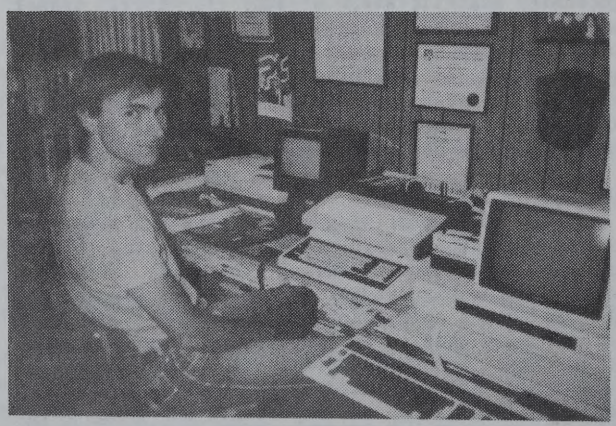
(ref. "Effect of Antenna Radiation Angles Upon HF Radio Signals Propagated Over Long Distances", W.F.Utlaut, "Journal of Research of the National Bureau of Standards--D.Radio Propagation", Vol.65D, No.2, March-April 1961, pp.167,174)

de VE3BMV:

It appears that both studies were done during the sunspot minima. My observation has been that we seem to be propagating at lower angles during the sunspot minima and at higher angles during the sunspot maxima. This is a general statement. There are of course other factors that contribute to the enhancement of radio wave propagation. Location, time of the day, season, geomagnetic activity, etc.

During one of our endless experiments with stacked RAZOR BEAMS, we had a situation when an OK station gave us a better report when we were using the high antenna or both stacked (low angle). At the same time, a UL7 called saying that the low antenna was better by 15 to 20 dB than the top one or the stack. The majority of the signals during the high sunspot activity seem to propagate at greater heights and the high angle antennas, on the short towers, are doing well. During the low sunspot activity, low angle radiators can really make a difference. Just listen nowadays on 80 and 160 meters and you will see that verticals really "play." (I learned the lesson myself during the last CQ WW contest on 80 meters: I kept calling stations from the Pacific for a few minutes, when along comes VE3XO with his phased verticals, one call and he goes away with a contact!)

Thanks to Jack Gelfand, K2BMI, for providing the reference article and to Mike, VE3JTQ, for the writeup. (VE3BMV)



Mike Spenuk, VE3JTQ using "stacked" computers.

KANSAS CITY DX CLUB

The new officers of famous fun loving KCDX Club are: President is Larry Wilson, KORWL, Vice President Mike Bellinger, KOUAA and Steve Gecewicz, KOCS was reelected as a Secretary. Rick Barnett, KBOU is a club Treasurer and Mike Crabtree, ABOX will continue as Editor of the newsletter. The newly elected officers are a talented group of DXers and contesters who should provide excellent leadership for the club in the coming year.

KCDXC welcomes the ranks of Kansas DX Association to their club. KDXA group was dissolving at the end of 1985 and an arrangement was worked out for members of KDXA to join the KCDXC. This should give a boost to already known and very vital group of KCDXC. Watch for their fun filled hospitality suite in Dayton!

CQ-WW-CW - The crew at station V3A put the club into a much higher bracket with a fabulous 5 million point effort in the CQ w CW contest.

Four operators, WOJLC, KORWL, W3UM, and W6OUL, kept the potent Central American signal on the air for 48 hours, with an amazing 4500 QSO's.

Locally the club enjoyed a number of fine efforts, with KMOL, taking the single operator trophy, with a fine 208K score.

The multi operator crew at WONA contributed a solid 282K to the club tally, with WOAR, WOYR, WOCY and WOFHI making things happen down in lake country.

The rough scores are as follows:

CALL	TYPE	QSOS	ZONE	CON	SCORE
WONA	MS	471	82	178	282,211
KMOL	ALL	355	77	150	208,000
NOXA	160M	116	18	33	15,500
KBOU	40M	78	26	46	15,264
KOVBU	15M	62	19	29	7,872
KOCS	160M	32	10	16	1,794
V3A	MS	4574	141	374	5M!!!!

This represents one of the clubs better efforts, with a combined score of almost 8 million for both the CW and Phone weekends. (KOCS, KCDXC)

DIXIE DXERS CONTEST CLUB

The Dixie DXer Contest Club is pleased to announce its slate of officers for the 1986 term. They are: President: W8ZF, Dean Fredrickson; Vice-President: K4JPD, Steve McElroy, Sec./Tres.: WD4IKI, Richard Goldblatt; Publications Editor: WB4GWA, Ron Johnson; Activities Chairman: NQ4I/KB4IUC, Rick & Sheila Dougherty; Technical Advisor: N4UZ, Al Roloff

Our purpose is to promote the organization and sport of radio contesting for the group as well as the individual operator. The Dixie DXer Contest Club offers our expertise and assistance to other clubs. Our members have organized and taken part in many contest DXpeditions such as HH2CQ, 4V2C, 8R1Z, PJ2FR, K4JPD/C6A, VS6TA, and J87A to name a few.

We meet the 3rd Thursday of each month, near Atlanta Airport, at the Morrison's Cafeteria, at 6:00 p.m. We discuss events, contesting, DXpeditions, and operating practices. We also get together on Sunday nights 3.805 MHz, 8:05 p.m. or just about all the time on 145.51 MHz, Simplex.

For further information, call W8ZF at (404) 925-5530 or 921-3400.

OPTIMIZED YAGI ANTENNA DESIGN

Wayne Hillenbrand, N2FB

"Antenna - That part of a transmitting or receiving system which is designed to radiate or to receive electromagnetic energy." (IEEE Standard Dictionary of Electrical and Electronic Terms)

"Design - To prepare the preliminary sketch or the plans for a work to be executed, esp. to plan the form and structure of." (Random House Dictionary)

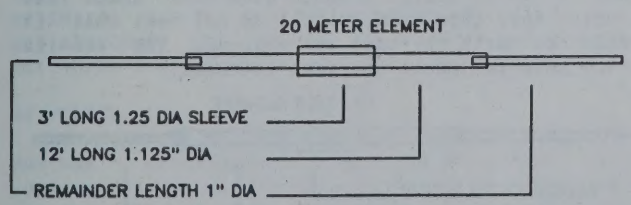
"Aluminum is cheap." - (Famous antenna designer)

In order to get W3FG to computer dupe my CQ DX logs this year, I promised to give him an article about some antennas. Several months ago Frank, W3LPL, gave me some dimensions for a 6 element 15 meter beam with a one wavelength long boom. Physically, the antenna element spacings and lengths were very strange. After consulting with the designer, John Kenney, W1RR, I decided to implement a yagi design program that John worked with on a supercomputer that is sometimes available to me.

The original coding was done by I.L. Morris for a PhD thesis at Harvard in 1965. His program would compute the gain from 0 degrees to 180 degrees for a yagi array. Next, I think, John Kenney modified the program to iterate lengths and spacings while searching for optimum gain and F/B ratio. K1GQ might also have been responsible for part of this. At any rate, I have two programs now, one which will compute the gain and F/B over many frequencies, and a second that, when given a boom length and initial element lengths, will search for an optimum antenna. Unfortunately, all initial conditions don't always converge to the same antenna.

What is needed now are some antenna dimensions. The dimensions have been taper corrected as per W2PV's taper calculations. I claim no originality for anything, either. Two antennas for 14 Mhz will be presented: a 6 element long boom (3/4 wavelength) and a 4 element baby. The 4 element antenna is derived directly from a HY-GAIN 204BA. The CRAY XMP had a hard time making a better 4 element yagi with good gain and front to back across a large segment of the band. (How about W2PV 4 element yagi? - VE3BMV)

The 6 element beam has a 54 foot long 3 inch boom. All elements are insulated from the boom with a plastic plate. The antenna is mounted on a PVRC tilt mount to ease construction. The illustration below shows a typical element.



A 3 foot long 1-1/4 inch sleeve is slid over a 12 foot long 1-1/8 inch piece. This prevents the U-bolts from deforming the element. The elements have rope inside for vibration damping. Element splices can be made with stainless steel hose clamps and hacksaw slits. (Wear gloves!) I also use conductive anti-seize compound at the joints. These elements are robust, and they are mechanically and electrically sound.

After this antenna was built, I tested it on the W3LPL and N2FB test range. No claim for accuracy is made, but we feel the measured pattern is close to the calculated pattern.

Calculated results for the 6 element 54 foot boom 14 Mhz antenna

Freq (MHz)	Gain (dBi)	F/B (dB)
14.00	10.71	26.59
14.05	10.72	27.08
14.10	10.71	26.78
14.15	10.68	26.72
14.20	10.62	27.56
14.25	10.53	29.52
14.30	10.39	25.56
14.35	10.16	22.05

Element details (also refer to the figure)

6 ELEMENT 20 METER YAGI

ELEMENT #		REMAINDER LENGTHS	SPACING
REF	1	138.97"	
			86.38"
DR	2	124.50"	
			77.71"
D1	3	126.63"	
			157.50"
D2	4	121.94"	
			142.86"
D3	5	121.89"	
			179.54"
D4	6	113.52"	

The gamma match is simply some RG-8 center conductor stuck in a 4 foot long tube, the end of which is crimped shut to keep water out. The match is the same as any other yagi.

For the rocket scientists out there, explain this: Remove the driven element and the elements are almost equally spaced. As it is now, it is very back heavy. Why is this such a good yagi? Equal spacing of all elements produces a very high F/B, but only for a narrow bandwidth. I have started to compare yagis to filters, some with very high Q and narrow bandwidth, and some with lower Q (F/B) but wider bandwidth.

It has been brought to my attention that the driven element appears to be very short, this is correct. The shorter driven element, I think, will provide a better SWR across the entire band. The length of the driven element will not change the pattern, but it will make a difference in SWR bandwidth. I think you will be happy with this. If you can't manage the short length, then use the length for the 4 element antenna.

The 4 element beam has a 26 foot boom. Listed

below are the calculated gain and F/B. I have not built this antenna, but why don't you and tell me if it works. Construction is the same as the 6 element antenna, but the boom can be 2 inch diameter. Calculated results for the 4 element 26 foot boom 14 Mhz antenna:

Freq (MHz)	Gain (dBi)	F/B (dB)
14.00	8.27	20.42
14.10	8.39	24.96
14.15	8.44	24.72
14.20	8.49	22.81
14.25	8.53	20.66
14.30	8.58	18.78
14.35	8.62	17.18

Element details (also refer to the figure)

4 ELEMENT 20 METER YAGI

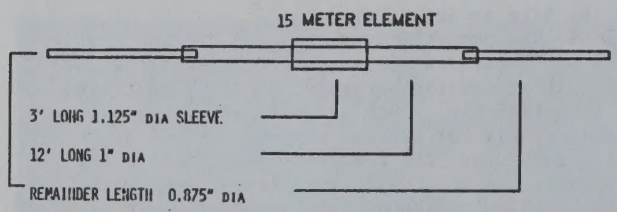
ELEMENT #	REMAINDER LENGTH	SPACING
REF 1	136.39"	
		122.88"
DR 2	126.89"	
		88.75"
D1 3	116.67"	
		95.63"
D2 4	112.65"	

Now that everyone has built the 20 meter yagis, it is time to do 15 meters. You could simply scale the dimensions of the boom and elements, but additional element correction would be needed, since the diameter of the elements would not be scaled proportionately. More on this later.

The two antennas for 15 meters are: 6 elements on a 48 foot boom, and 4 elements on a 24 foot boom. Both booms can be 2 inch diameter, but if you use 2 inch diameter on the 48 foot boom you had better make it 0.125 inch wall thickness for the center 24 feet.

The 6 element beam is a real winner. Electrically, the boom is one wavelength long. I tried it with 8 elements, but had very little luck. I also tried 6 and 8 elements on a 72 foot boom, but the antennas were not much, if any, better than the 6 element 48 foot boom.

(Computer simulation? Well designed real 8 element Yagi antenna is ALWAYS better than 6 element! When we judge the antenna we look at the gain but also at the pattern, size of the other than main lobes. - VE3BMV)



Now to build the antennas. Slip a 3 foot piece of 1.125 inch diameter 0.058 inch wall thickness tube over a 12 foot long 1 inch diameter piece. Use sheet metal screws or rivets to secure the sleeve on the 12 foot piece. The rest of the element is 0.875 inch diameter tubing slid at least 6 inches into the 1 inch diameter part. Details on element construction are the same as for 20 meter antenna. Refer to the diagram and use the chart below for the "remainder" length and element spacings.

15 METER BEAM ----- 6 ELEMENT -----

ELEMENT	REMAINDER LENGTH	SPACING
R	70.24	
		68.22
DR	64.5	
		68.77
D1	60.18	
		138.36
D2	58.34	
		138.36
D3	57.3	
		162.29
D4	49.12	

15 METER BEAM ----- 4 ELEMENT -----

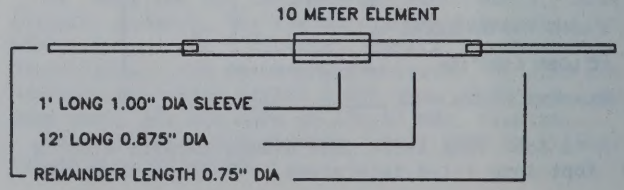
ELEMENT	REMAINDER LENGTH	SPACING
R	70.85	
		73.75
DE	64.50	
		75.54
D1	59.90	
		138.72
D2	52.97	

The 4 element antenna can be made of 2 inch diameter 0.058 inch wall thickness tubing. The "remainder" lengths and element spacings are listed in the above chart. Here are the calculated performance figures for both antennas.

	--- 6 ELEMENT ---		--- 4 ELEMENT ---	
FREQ MHz	F/B dB	GAIN dB	F/B dB	GAIN dB
21.00	30.31	11.51	17.32	9.39
21.05	36.96	11.52	19.74	9.5
21.10	51.89	11.51	21.01	9.53
21.15	36.19	11.48	22.74	9.57
21.20	31.52	11.43	25.3	9.61
21.25	29.59	11.34	29.61	9.64
21.35	32.84	11.07	31.96	9.68
21.40	37.06	10.08	24.6	9.67
21.45	24.03	10.53	20.07	9.62

The 4 element beam is also a fine antenna. As you can see, the 6 element monster, which is substantially larger, will not be much louder. As a matter of fact, the difference is not discernible to the naked ear. (True with audio tests, but not when it comes to comparing the RF antenna performance. See note at the end of the article. - VE3BMV) However, the front to back is much better for the 6 element version.

Now for 10 meters. These 10 meter antennas are simply scaled down versions of the other antennas that I did earlier. I could have made some real giants for this band, but I do not feel that it would be worth the time and expense. The results below show two excellent Yagi antennas.



6 ELEMENT 10 METER YAGI 24' BOOM

ELEMENT #	REMAINDER LENGTHS	SPACING
REF 1	33.48"	
		35.19"
DR 2	26.25"	
		35.86"
D1 3	27.32"	
		75.75"
D2 4	25.19"	
		68.43"
D3 5	24.95"	
		86.77"
D4 6	20.77"	

4 ELEMENT 10 METER YAGI 12' BOOM

ELEMENT #	REMAINDER LENGTH	SPACING
REF 1	31.70"	
		57.55"
DR 2	26.25"	
		40.38"
D1 3	21.84"	
		43.82"
D2 4	19.82"	

Now for the results. If you look carefully you will notice that the booms are not exactly half the length of the 20 meter booms as you might expect. I tried to shorten these booms to make them an even multiple of 12 feet. This will simplify construction without degrading the performance very much. I use 2 inch diameter aluminum for my boom. I am sure smaller boom diameters would work, but I had a lot of 2" around.

	-------6 ELEMENT-------		-------4 ELEMENT-------	
FREQ (MHZ)	F/B (db)	GAIN (dbi)	F/B (db)	GAIN (dbi)
28.00	31.81	10.57	20.36	8.13
28.10	31.41	10.55	23.72	8.20
28.20	29.26	10.51	28.11	8.26
28.30	28.24	10.45	31.23	8.31
28.40	28.74	10.38	27.94	8.37
28.50	30.70	10.22	24.06	8.42
28.60	29.59	10.03	21.21	8.47
28.70	23.37	9.74	17.32	8.56
28.80	18.03	9.32	17.32	8.56
28.90	14.02	8.76	15.90	8.61

This sums it up for 10, 15 and 20 meters. I could spend the time and do a 40 meter Yagi, if you are interested please drop me a line and I will help. My experiments have shown that with only 3 elements, trying to optimize a Yagi is almost impossible. For a good 3 element full sized beam (48' boom) the design and taper schedule that W4BVV and W3LPL used a very good. With only 3 elements there are not enough variables to optimize at. An optimized 4 element 7 MHz beam would yield some optimization, but the increased physical size is not worth the effort. (PVRC Newsletter)

de VE3BMV:

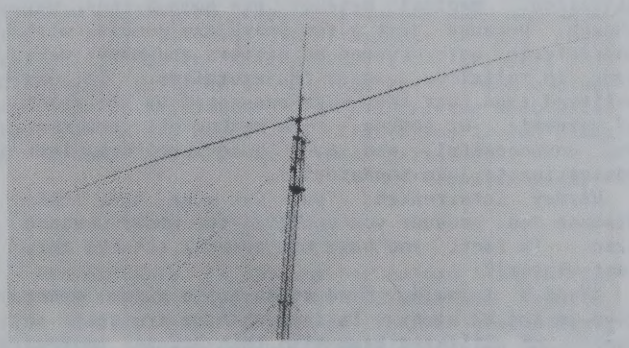
We have to be very careful when judging the antenna performance, especially from the contester's point of view. Looking at the gain figures, it is true that ear has a hard time to distinguish 2 dB difference on the audio signal. This is perhaps true if we look at two signals that are, one 18 dB over S9 and the other 20 dB over nine. No problem there. But the situation is quite different when we look at the signals down in the noise. The 2 dB in the gain makes the difference between hearing and not hearing the station. Other factors come to play too. If the antenna has a better and "cleaner" pattern (the back and side lobes are way down), this improves signal to noise ratio quite dramatically. This becomes important i.e. when we are working to Japan. Band is quiet when beaming North or plus/minus 45 degrees. There is more atmospheric noise coming from the south, not counting the QRM from other stations to south.

For the contester every half of a dB means extending the band opening or another layer of those "10 W and dipole antenna" stations and there is a lot of them. That extends the range and allows to work the stuff when others are not making it.

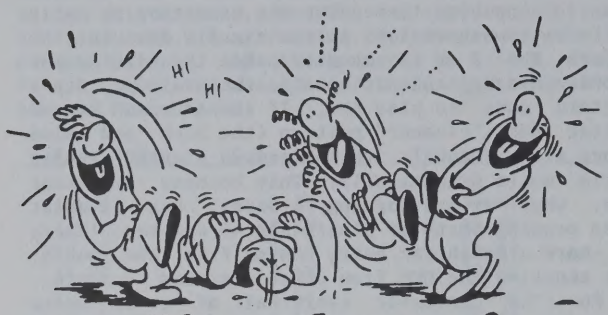
From my practical experience it appears that the one or two dB gain measured on the antenna range translates in the real life situation to something more like 5 to 10 dB difference when comparing the antennas in the marginal situations. We have done enough testing between my RAZOR BEAMS and VE3HGN's 5 el. KLM monobander to prove this. Also looking at the results between my monoband scores and W2PV (closest "standard") corresponding band results I was able to equal or better the results of Jim's multi operator arrangement using spotters and "multiplier operator," while I was operating from the city (46x125') lot with high level of power line noise. Some world records made from the "unrare" country VE3 can attest to that too.

For the DXer, one or two dB difference is perhaps not much to worry about. It just might require a few more calls in the pileup. Serious contester can not afford losing half a dB. It is like comparing binoculars. You might not care if the truck you are looking at appears a bit smaller. But if you can't read his license plate just because you are on the treshold of your resolution, while the other binocular can, there is a big difference - you are NOT MAKING IT! DXer can wait for the truck to get closer. The contester wants to see and log him before the hordes will get hold of him. It is so much easier this way, no ZOO to fight. So don't ignore even half of a dB!

We also have to be very careful when making computer calculations and simulations. The ultimate test is on the antenna test range and real life test. There is sometimes a bit more to it than just what is put into the formulas. Computer just calculates and doesn't know everything. It is a great tool, but it has to be used wisely. It would very interesting to compare the 4 element design described above with W2PV 4 element yagi. Anyone can put them up and plot the patterns? (VE3BMV)



N4RJ rotatable 80 m dipole at 160 feet.



radio funnies

Mike Crabtree, ABØX

"CONTESTERIA"

Harvey, NOLID, dropped by my shack with his contribution for the club newsletter the day after the DX Contest. His eyes looked blazed over and he moaned when he sat down. I quickly diagnosed Contesteria from his outward symptoms. Our conversation drifted into his contest performance as Harvey is a relative newcomer to the world of contesting. His remarks were graphic, "Sunday evening at 2359Z I stumbled upstairs to dinner like a zombie roaming over the jungles of Haiti in a "B" movie. I told my XYL I would never again punish myself by operating an entire weekend in a radio contest. All she said was "Wanna bet?"

I patted Harvey's back and explained to him that all would be OK in a few days, and that he just had an attack of Contesteria. He winced slightly and said, "What in the world is that?" I explained that "Contesteria is a chronic disease that makes a normally sane man enter a crazed state of mind and spend an entire weekend in a small room yelling into a radio, while going without sleep and totally ignoring his family. Usually the crazed state only lasts for 48 hours of so, depending on the severity of the attack. The physical side effects are blurry vision during a JA run, muscle aches and stiffness, severe headaches, and sometimes a foreign accent creeps into the speech patterns of the afflicted, followed by total exhaustion."

"Wow, I think I got it then! I suppose it's fatal?!" Harvey sighed.

I assured him that Contesteria is not usually terminal, however, some people during an attack of this disease have been know to climb tall towers in the middle of the night to repair rotors and antennas, but normally it isn't a life threatening situation. Medical science has come a long way though, because just a few years ago people with Contesteria were shunned by doctors and many were sent to religious leaders for exorcisms. It was believed then that they were possessed by the ghost of Marconi. Of course, this method of treatment was unsuccessful, and many good rate men left contesting to join Monasteries.

Harvey interrupted, "But you must have this disease too, because you operated the whole weekend also. In fact, you have had several attacks this last winter!"

"Yeah," I said, "and so do quite a few other guys in the DX club. In fact, there are quite a number of afflicted hams with this disease spread out all over the world."

"But you said that Contesteria is a chronic disease. Does that mean I will have this forever?" Harvey asked.

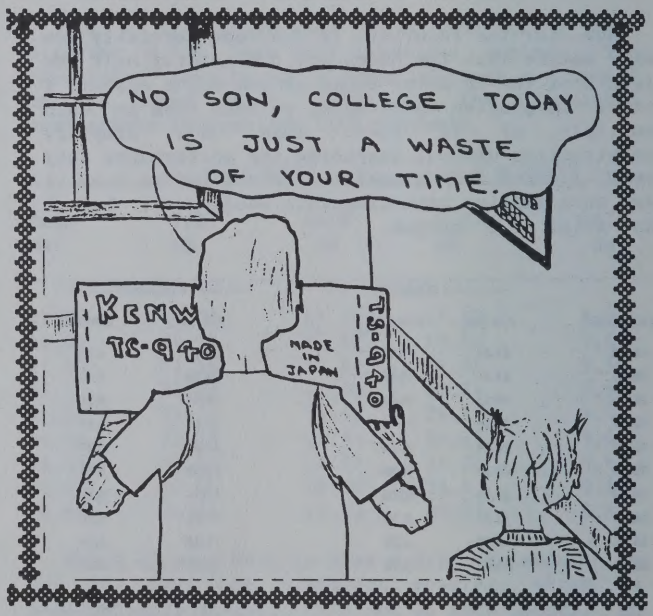
Sadly I answered his question, "Few people are ever cured of this disease. About the only treatment for Contesteria is turn the afflicted person loose in front of a radio in a closed room when the crazed state begins to appear. The disease must then just run its course."

"This sickness must be affecting my mind, because I thought I had fun this last weekend?" Harvey said with a puzzled look on his face.

Smiling slightly I suggested he go home and get some rest, for surely the stiff neck and sore throat will go away in a few days. At the door, I reminded him that the stricken ones of us with Contesteria had to be strong and learn to live with our affliction. As we shook hands I looked into his worried and naive eyes and whispered, "I HAD FUN IN THE CONTEST TOO!"

Contesteria, it strikes every DXer once in a while. (ABØX)

KC dx in



Episode #1 by KØCS

Bill explains to Scotty some of the realities of Knsas City DX Club membership.

KANSAS DX AND POETRY SOCIETY

The annual winter meeting of the Kansas DX and Poetry Society was held in Tonganoxie, Kansas on January 10th. The cold, blustery weather was soon forgotten as members spent most of the morning talking DX and preparing their verses for the Limerick Contest which always highlights KDXPS meetings.

As usual the Limerick Contest was kicked off with the reading of a few verses written by our mentor W9BRD, Rod Newkirk, of QST fame:

Sloshy-voiced Screamy O'Kree
Who Clips and compresses with glee

Couldn't care less
That his signal's a mess
It's harmless at his end, you see.

Many people in the crowd whistled and stomped their feet in praise of Newkirk's ability to make them laugh while still making an important point about the world of DX.

As the first young contestant rose to read his verse the KDXPS politely listened even though they didn't expect much from a jean clad teenage contester:

The Contester from East PA
Ran strings of loud JA's
He beamed his power
From a tall tower
And hummed "Born in the USA!"

The younger members of the KDXPS applauded loudly and yelled out things like "Yeah, the Boss!" but the other 40 set just shook their heads in dismay.

Next, one of the New Breed of CW operators stepped up before the crowd and read the following verses:

The Contester from Southern Mizzou
Learned to operate without his shoe,
"QLF" he said
"Frees my hands instead,
But, Boy, does my shack phew!"

Unfortunately, many of the KDXPS members were not aware of the QLF (send with left foot) Technique of CW and only responded with quiet, but polite applause. However, the judges were better able to reward the QLF'er for his fine contribution to modern literature.

The next contestant to recite was obviously a technically oriented ham as he had 3 hand-helds and numerous wires draped all over his body. Yet, his limerick was of the highest quality and hit close to home for many of us:

Ham radio caused great family strife,
And put pressure on his married life,
It was a disaster!
So he bought a Shackmaster,
And he ended up remoting his wife!

Loud applause immediately followed his presentation, especially from a number of the henpecked hams present. Several divorced members rose to give him a standing ovation.

It had become apparent that a real jewel was needed to win the competition. As Defending Champion I was given the opportunity to recite my latest gem last. See what you think:

Old time DXer Roger Pate
Had trouble with his upper plate!
It slipped when he talked,
At CQ's he balked
And Big Pileups he learned to hate!

Luckily most of the judges were young enough to have never battled dentures and through the verses were quite humorous. So, amidst loud whistles and the clinking of 807's I accepted the shiny KDXPS trophy, one more time. Yet, as I returned to my seat I overheard a group of old timers numbling something about "A Newkirk he ain't!" ABØX (KCDXC)

HAMS CRIMINALS?

A Washington Secret Service spokeswoman has put ham radio operators and criminals in the same category, according to an Associated Press story of November 17.

The main thrust of the story dealt with statements made by Rep. Glen English (D-Okla) and Sen. dennis De Concini (D - Ariz) regarding their concern that drug dealers and terrorists have the ability to monitor government frequencies, including those used by Presidential vehicles.

The two legislators claim that this ability to monitor has placed President Reagan in "grave danger," and has impeded law enforcement action against drug dealers. However, it is the statement of Jane Vezeris, speaking for the Secret Service, about a 62 page list seized during a drug raid last September 15th, that bears our scrutiny.

In assessing the list of 1000 communications channels, Ms. Vezeris said: "The Agency is very much aware that anyone, at any time, can be monitoring our radio frequencies in the clear, including criminals and ham radio operators."

From the description of the list in the AP wire story, it appears to be one that anyone can buy at the local electronic store for about five bucks. It's also far from secret.

More important, though, is the view that the Secret Service takes of our service. No wonder our country is having so much of a problem with security these days. If the Secret Service thinks that hams are equivalent to criminals, we can only shudder at what they might consider CB operators to be.

In our view, Ms. Vezeris and the Secret Service owe the half million US hams a personal apology. Tnx W6FGE. (Westlink Report)

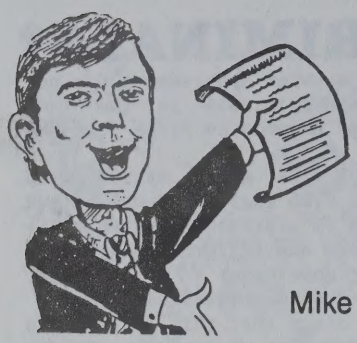
U.K. HAMS ALLOWED CROSSBAND

United Kingdom (via RSGB) - Hams in Great Britain have new crossband operating privileges. The Department of Trade and Industry has issued a release that permits this type of operation with the following restrictions: (a) A licensed UK amateur may receive other properly authorized amateur transmissions, but may only transmit on frequencies for which he is licensed; (b) Each station must be identified, but the identification of the second station should not be transmitted by the first. Details of receive and transmit frequencies should be given at the beginning and end of the QSO, and every 15 minutes in between; (C) Class B licensees may use spaces satellite transponders which relay a frequency band in which they are licensed to transmit to any band authorized for the Amateur Satellite Service; (d) Crossband operation between amateur and non-amateur stations is forbidden. The DTI release also noted that there are now 27,900 Class A and 27,780 Class B license holders in Great Britain.

(Westlink Report)

WANTED!

RADIOSPORTING is looking for column leaders for the following departments: DX Monoband Reports, IRSA Awards, IRSA Contests, VHF/UHF Technology, Satellite, Computers - Hardware/Software, Contest Results and Records, SWL, 80 meter activities, etc.



TECH NEWS

Mike Spenuk, VE3JTQ

JAPAN TAKES ON MEMORY MARKET

Last December the competition between American and Japanese semiconductor companies heated up when Toshiba announced that it will mass produce one megabit dynamic random access memories (DRAMs) to gain a larger portion of the $6 Billion per year market. Nine American and six Japanese companies are competing for the 1 Megabit DRAM customers. Meanwhile the race is on for producing the next generation DRAMs--4 Megabit DRAMs--which should occur within three years.

But there is a problem that these companies must over come. That is, to push existing technology to the limit and wait for new technology to appear or develop the new technology now and be ahead in the race. Toshiba has decided to use existing technology--that's why they are leading the pack right now. They have packed the memory cells into 62.5 square millimeters of surface; about one third the size of the currently available 256k DRAMs. To mass produce the chips, Toshiba is running its stepper machines (the device in which the pattern mask is aligned over the silicon wafer and exposed to light in minute steps) to their extreme limit of performance.

The DRAM consists of cells which are composed of a capacitor to store the charge that represents the "1" or "0", and a transistor to switch charge to the capacitor on and off which allows information to be read from or written to the cell. The charge on the capacitor is limited by the amount of surface area of the plates, their flatness, and the thickness of the insulator between them. There is also a minimum amount of charge the capacitor must hold to maintain the correct logic state. Soft errors result if this criterion is not maintained.

As the integrated circuits continue to shrink there is less space for the capacitor plates. The "new solution" is to mount the plates vertically instead of horizontally. To accomplish this a trench must be dug in the silicon and the plates mounted in the trenches. The major problem is in maintaining even etching in the silicon. NEC, Texas Instruments, and Advanced Micro Devices are using this technique to manufacture their 1 Megabit DRAMs.

The initial cost of the Megabit chip will be about (30 pounds). Toshiba hopes to be producing one million devices a month by April.

(New Scientist, 5 Dec. 85)

BRITAIN EDUCATES PUBLIC ABOUT TVI

Britain is educating the public about TVI. A free booklet available at any local Post Office provides a tutorial on solving reception problems. "How to improve radio and television reception" contains color pictures of television screens showing co-channel reception, interference from citizen-band radio, and ghosting caused by unwanted reflections of signals off local buildings.

The second half of the book is more technical and deals with construction of filters to block unwanted signals. Also included are names and addresses of British firms which sell filters and a complaint form to request the Radio Investigation Service (RIS) to investigate the interference. (New Scientist, 21 Nov. 85)

We have a similar booklet in Canada, "How to identify and resolve Radio-TV Interference Problems" published by the Department of Communications; however, most of the material is reprinted (with permission) from the Federal Communications Commission's publication of the same name. It is available from any of the DOC offices. Maybe it should be at the post offices so that more people will be educated about interference and its causes and solutions? How often do you get calls from the neighbors when high sporadic-E-E conditions exist and cause havoc on local channel 2 reception?

CHINA IS GOING HI-TECH

China is planning to spend $18 billion over the next fifteen years on improving its telecommunications network with the latest digital technology. Currently, the country is using pre-war technology to run the phone system which provides only four phones per 1,000 people.

By the year 2000, this figure is projected to increase almost three-fold to 28 phones per 1,000 people, and increasing the number of lines from 5.6 million to 33.6 million. In comparison, the United States has 100 million lines for a population only one quarter that of China. It is anticipated that major cities will have one phone for every four people, while in the countryside (about 800 million people) the figure will decrease to one phone for every 1,000 people.

The Chinese see telecommunications as one of the bottlenecks in its modernization program. The government wants to introduce every kind of modern telecommunications service: video transmission networks, teleconferencing, high speed facsimile, video-data communications, packet switched electronic mail, mobile communications including cellular radio, automatic mail handling... And, China wants to build up its own technological industrial base.

Since the Chinese are so far behind the rest of the world and having so few telephone cables, optical fiber cables can be laid straight away and satellite-based networks will be viable over shorter distances than is developed countries.

Most of the imports of telecommunications technology to China are from Japan, but American companies are beginning to realize the great potential the Chinese market holds since the lifting of the restrictions which governed the sale of high tech equipment to China. (New Scientist)

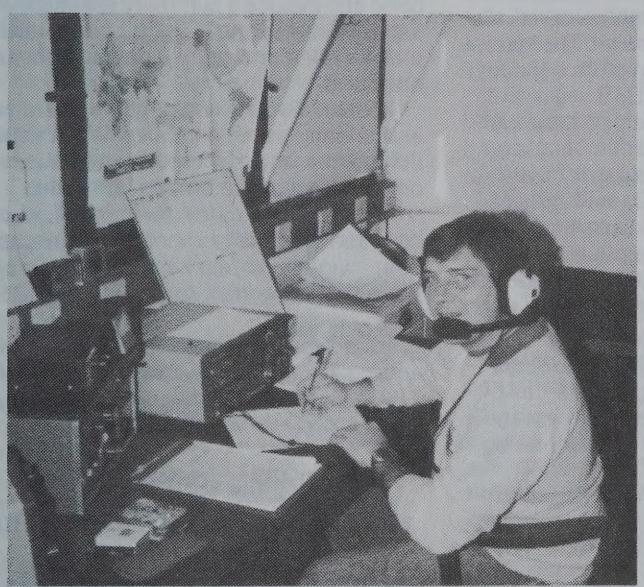
Talk about culture-shock! We cannot even imagine what will happen to a country that still uses almost 100 per cent manual labor for all tasks to suddenly come face to face with the latest in telecommunications technology. Most of us find it somewhat overwhelming and we are right in the

middle of it.

MICROPRO CHASING PIRATES

MicroPro, best known for its word processing program, "Wordstar", is offering software pirates in Britain a chance to legitimize their pirated version of Wordstar by paying a 46 pound licensing fee. "Micropro has announced an 'amnesty' for illicit owners of Wordstar that will probably last until the end of February. After the closing date, owners of pirated programs will be liable to prosecution." The company says it has sold 1.5 million copies world wide and 85,000 in Britain. It estimates there are 3 or 4 illegal copies in circulation for every authorized copy. MicroPro's managing director in Britain says that they would only prosecute companies for software theft. Similar amnesties are being considered in France and West Germany. (New Scientist, 14 Nov. 85)

G4MEL - MEL CLUB STATION



MEL Crawley and MEL Defence Systems Ltd. (MEL DSL) radio amateurs joined forces during the weekend of the 2nd and 3rd of November to participate in the 7th annual Philip's Amateur Radio Event, known as the "QSO Party." The objective of this event is to encourage radio amateurs within the various Philip's organizations to make contact with each other by radio and exchange greetings, signal strength and their affiliation with Philips during a specified 24 hour operating period.

Curt Bowles, VE3ZN, Mel DSL (shown operating) joined Derek Atter, G3GRO, Phil, G4MKW and other Mel Crawley amateurs at the MEL Club Station in Rusper to operate during his QSO party using the callsign G4MEL. Over 200 contacts were made during the operating period in 25 countries. G4MEL was active for 16 hours out of the 24, using a FT-902 transceiver plus a 400 watt linear amplifier with a full size four element YAGI (204BA) on 20 meters at 60 feet above ground plus inverted Vees were used on 160, 80, and 40 meters.

G4MEL club is also active on VFH/UHF bands with long Yagis mounted atop of crank up tower. (VE3ZN)

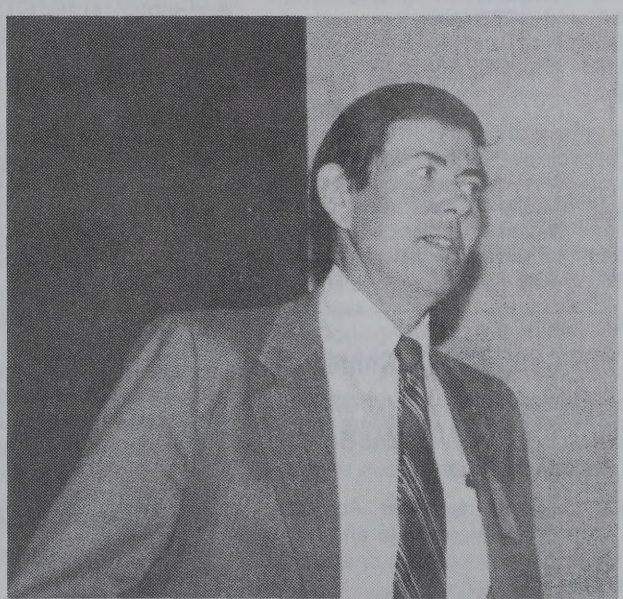
PROFILES

Paula Franke, WB9TBU

was first licensed on August, 1976 as WN8BXB in Cincinnati, Ohio. She moved to 9 Land in 1977 where she got her current call WB9TBU; earned Extra Class in 1980. Paula is a member of YLRL, IRSA, ARRK and the Joliet Amateur Radio Society where she is the editor of the JARS newsletter "Groundwaves." She works the low bands, especially 40, 30 and 20 m almost exclusively CW. WB9TBU does a lot of contesting and some occasional DX chasing. Her station includes a TenTec Argosy, TenTec Century 21, dipoles, 10/15/20 beam and a 30 foot tower.

Paula, WB9TBU, has recently completed academic requirements for her M.A. in media communications. She just finished a one-year stint teaching television production at Governors State University. Also, she is a freelance writer and just had three scripts produced for a children's television program (The Magic Door) in Chicago. At the moment she is trying to sell them a script about ham radio. Other CompuServe subscribers can find Paula on HAMNET.

RADIOSPORTING welcomes Paula aboard as a contributor and writer about the "affairs" of YLs and Little Pistols.



Bob Nash, VE3KZ, VP2KBZ speaking at the Contest Forum during the Radio Society of Ontario Convention in London, Ontario. Bob has been recently promoted to Head of Technology Department at the Humber College in Toronto (VE3HUM club station). New responsibilities are keeping him very busy. Bob still finds time to contribute to our magazine and he is a member of ARRL CAC.

CONTEST RULES

FRANK ANZALONE, W1WY
CQ Magazine

Calendar of Events

*	Mar.	1-2	ARRL DX Phone Contest
*	Mar.	8-9	QCWA Phone QSO Party
	Mar.	8-9	RSGB Commonwealth
	Mar.	8-10	Virginia QSO Party
	Mar.	9-10	Wisconsin QSO Party
	Mar.	15-16	Bermuda Contest
*	Mar.	15-16	YL-ISSB CW Contest
	Mar.	22-24	BARTG Spring RTTY Contest
	Mar.	**29-30**	**CQ WW WPX SSB Contest**
	Apr.	9-10	DX-YL to N.A. YL CW
	Apr.	12-13	IBM QSO Party
	Apr.	16-17	DX-YL to N.A. YL SSB
	Apr.	19-20	ARCI QRP Spring CW
	Apr.	26-27	Swiss Helvetia Contest
	May	3-4	County Hunters SSB Contest
	May	10-11	USSR CQ-M Contest
	May	17-18	Michigan QSO Party
	May	17-18	ARI International Contest
	May	**24-25**	**CQ WW WPX CW Contest**
	My 31	-Jun 1	National 6 Meter Contest
	Jul.	**19-20**	**CQ VHF WPX Contest**

* *Covered last month.*

B.A.R.T.G. Spring RTTY Contest

0200Z Sat. to 0200Z Mon., March 22-24

This contest is sponsored by the British Amateur Radio Teleprinter Group and is being administrated by Peter Adams, G6LZB. The contest is open to all amateurs in three classes—single operator, multi-operator, and SWL.

Activity will be on all bands 3.5-28 MHz, but no 10 MHz. Operation is limited to 30 hours out of the 48-hour contest period. The 18 hours off may be taken at any time, but not less than 3-hour periods.

Exchange: RST plus a three-figure contact number and time in GMT (full four figures).

Points: Contacts with stations within own country 2 points. With stations in other countries 10 points. And a bonus of 200 points for each country worked on each band including your own. The same station may be worked on each band for QSO and multiplier credit.

Multiplier: Total number of countries worked on each band and number of continents worked (continents are counted once only). W/K, VE/VO, and VK call areas will be counted as separate multipliers.

Final Score: (a) Total QSO points × country multiplier. (b) Country multiplier × bonus points × continents worked. Add sum of (a) and (b) for your final score.

Shortwave listeners must show call of station being heard, report of message being sent, and call of station being worked.

Awards: Certificates to the top-scoring stations in each class and to the continental leaders. Also in each W/K, VE/VO, and VK call area.

Use a separate log sheet for each band and a summary sheet showing the scoring, etc. Log forms are available from G6LZB; include 4 IRCs to cover postage.

Logs must be received by May 31st and go to: Peter Adams, G6LZB, 464 Whippendell Road, Watford, Herts. England WD1 7PT.

RSGB Commonwealth CW Contest

1200Z Sat. to 1200Z Sun., March 8-9

Only RSGB members residing in the United Kingdom and radio amateurs licensed to operate within the British Commonwealth and British Mandated Territories are eligible to participate.

Contacts between stations in the same call area are not permitted. All the British Isles prefixes count as one call area.

Activity will be on c.w. only, and it is requested that operation be confined to the lower 30 kHz of each band, 3.5 through 28 MHz (except for Novice contacts).

Exchange: RST plus a three-figure QSO number starting with 001.

Scoring: Each contact is worth 5 points. In addition, a bonus of 20 points may be claimed for the first, second, and third contact with each call area on each band.

Entries: May be single or multi-band.

Each band is scored separately and totaled for the final all-band score. There is no multiplier; just add the total QSO and bonus points from each band.

Multi-band scores cannot also be used for single-band awards. You can request that a single band be judged for awards. Only single operator entries will be accepted.

Use a separate log sheet for each band and include a summary sheet showing the scoring and a signed declaration that all rules and regulations have been observed.

There is also an SWL section with rules and scoring same as above. If both stations in contact are heard, they can be reported as separate entries for credit.

Awards: Certificates to the first, second, and third place winners in all areas, both single and multi-band, and three Rose Bowl Trophies for the overall winners.

Logs must be received by April 14th and go to: A.K. Gray, G4DJX, 44 Sherwood Avenue, St. Albans, Herts., AL4 9PQ England.

Virginia QSO Party

1800Z Sat. to 0200Z Mon., March 8-10

The Sterling Park ARC of Virginia is again sponsoring this year's party. The same station may be worked on each band and each mode; VA stations may work other in-state stations for QSO and multiplier credit; and VA mobiles in each county change.

Exchange: QSO no. (starting with 001) and QTH. County for VA; state, province, or DX country for others.

Scoring: One point per SSB contact, two points if on CW, RTTY, or SSTV. VA stations multiply total QSO points by sum of states, provinces, DX countries, and VA counties worked.

Others multiply total VA QSO points by the number of VA counties worked (maximum of 95).

Frequencies: CW—60 kHz up from low end of each band. SSB—3930, 7230, 14285, 21375, and 28575. Also Novice bands on CW, and both modes on 160 except in the "DX Window."

Awards: Certificates to winners in each

state, province, DX country, and VA county. There are six plaques as follows: to top VA single operator stations, CW/SSB, CW only, Mobile, QRP, and to the top CW/SSB out-of-state station, and 4th area club.

Indicate each new multiplier in a separate column as it is worked. Include a summary sheet with your log, and an SASE if results are desired.

Mailing deadline is April 1st and logs go to Virginia QSO Party, Att: Barry Pybas, KW4I, 313 W. Derby Ave., Sterling Park, VA 22170.

Wisconsin QSO Party

1800Z Sun. to 0100Z Mon., March 9–10

This one is a shorty, only 7 hours, and is again sponsored by the West Allis Radio Amateur Club.

The same station may be worked on each band and mode, and mobiles in each county change. Wisconsin stations may contact other in-state stations for QSO and multiplier credit.

Classes: Single operator, multi-operator, both single and multi-transmitter, Novice/Tech. and club.

Exchange: RS(T) and QTH. County for Wisc.; state or province for others.

Scoring: Phone QSO's count 1 point, 2 points if on CW.

Wisc. stations multiply total QSO points by (U.S. states + VE provinces + Wisc. counties) worked for their final score. DX contacts count for QSO points only.

Others use total Wisc. QSO points by the number of Wisc. counties worked (maximum of 72).

Wisc. mobiles can add a bonus of 500 points to their final score for each county outside their own from which they operate (minimum of 15 QSOs from each county).

Frequencies: CW—3550, 3725, 7050, 7125, 14050, 21150. SSB—3890, 7290, 14290. Other bands may be used.

Awards: To the highest scorers in each state and each province, and the highest aggregate club score. Plus awards to the top scorers in each class for Wisconsin stations.

Logs with more than 100 QSOs must include with their entry a separate dupe sheet for each mode.

Mailing deadline is April 15th to: Wisconsin QSO Party, c/o West Allis Radio Amateur Club, P.O. Box 1072, Milwaukee, WI 53201.

Bermuda Contest

0001Z Sat. to 2400Z Sun., March 15–16

This is the 28th year for this popular contest open to amateurs in the United States, Canada, the United Kingdom, West Germany, and Bermuda.

Stations in the U.S. and Canada may work the U.K., West Germany, and Bermuda. The U.K. and West Germany may work the U.S., Canada, and Bermuda. Activity will be on the 3.5, 7, 14, 21, and 28 MHz bands. Cross-band or cross-mode contacts are not permitted. The same station may be worked on each band, phone and again on CW, providing there is a 30-minute separation between contacts on the same band.

You are limited to 36 hours out of the 48-hour contest period. Off times of no less than three consecutive hours must be clearly indicated on the log. Participation is for single operator stations only and must be from their own residence.

It is recommended that stations operate without the aid of a linear amplifier, in keeping with the spirit of the contest.

Exchange: RS(T) and QTH. Parish for VP9, state for the U.S., province for Canada, county for the U.K., and DOC number for West Germany.

Scoring: Five points for each QSO. Multiply total by number of different VP9 stations worked on all bands. (Note: It's each VP9 station, not each parish.) Counted once only per band regardless of mode used.

Awards: Certificates to top scoring stations in each U.S. state, VE province, U.K. county, and DL DOK. The overall winner in each of the above countries, however, will receive something more substantial—a trophy to be presented at the Society's Annual Dinner in Bermuda in October. Round-trip transportation and hotel accommodations will be provided for the winners. (Note: Winners in '81, '82, '83, '84, and '85 are not eligible.)

Use a separate log sheet for each band and a dupe sheet for logs with 200 or more contacts. A penalty of three contacts will be deducted for each duplicate contact for which points are claimed. An excessive number of claimed duplicates may result in disqualification. The usual signed declaration is also required.

Entries must be received no later than May 31st by the Radio Society of Bermuda, Box HM275, Hamilton 5, Bermuda.

Winners in the 1985 contest were K2UR, VE1NG, G4BWP, DF9ZP, and VP9HK.

The Worked All Bermuda Award can no longer be obtained by contest log information. Proof of contact with all nine parishes is required in the form of QSL cards. Send your application to the above address attention the Awards Manager.

CQ World-Wide WPX Contest

SSB: March 29–30 CW: May 24–25
Starts: 0000Z Sat. Ends: 2400Z Sun.

Complete rules were published in the January issue. They are the same as those used last year with the same format that has been in use these past many years. Therefore, it would serve little purpose to repeat them again, since they are well established world-wide. Following are a few points to keep in mind.

Only 30 hours out of the 48-hour contest period may be used by single operator stations. Off times can be taken in up to five periods. Multi stations can operate the full 48 hours.

The QRP section has become very popular and is worth your attention.

The definition of the prefix multiplier is spelled out in detail and is not to be confused with the interpretation used by the *CQ* WPX Award program. Also bear in mind that stations in call areas different than that indicated by their call signs are required to sign portable.

The multiplier is determined by the number of different prefixes worked and is counted *once* only, regardless of how many times it is worked on other bands.

Another point to keep in mind is that in the multi-operator, single transmitter category only one transmitter and only one band may be used during the same 10-minute period. Picking up a new multiplier on another band during the same time period is definitely prohibited.

An alphabetical/numerical check list of claimed prefixes is a requirement and must be included with your log.

An updated trophy and plaque awards list now shows over 40 awards. Be sure to check the awards that are available.

Deadline for submitting your SSB entry is May 10th, and July 10th for the CW section. Be sure to indicate SSB or CW on the envelope.

All logs go to: *CQ* Magazine, WPX Contest, 76 North Broadway, Hicksville, NY 11801.

1985 WAEDC - High USA CW Scores

Single Opr.

K1ZM	819,868	K3WW	196,474
K1GQ	775,530	WC4E	124,969
K1RX	652,501	W1PH	118,560
W3GM	368,970	W9RE	105,000
K1XM	229,835		

Multi-Opr.

K1AR	353,481	W3AKD/3	15,336
N2WK	55,920		

K1ZM was the continental winner. A total of 57 U.S. logs were received.

1986 CQ 160 Meter Contest Plaques

CW Contest

World Single Operator: Sponsored by Don Busick, K5AAD

U.S.A. Single Operator (W0AW Memorial): Sponsored by Paul Newberry, N4PN

Europe Single Operator: Sponsored by Edward Sleight, K4SB

Asia Single Operator: Sponsored by James Curran, WD4RCO

World Multi-Operator: Sponsored by Hugh Valentine, N4RJ

SSB Contest

World Single Operator: Sponsored by Don Busick, K5AAD

U.S.A. Single Operator: Sponsored by David Thompson, K4JRB

Europe Single Operator: Sponsored by Frankford Radio Club

Oceania Single Operator: Sponsored by Dixie DX'ers

World Multi-Operator: Sponsored by South East DX Club

Announcement of the North Carolina QSO Party scheduled for February 1–2 was received much too late to make the February issue. In previous years it was held in November, so it was unfortunate that I could not give you this information in time. In case you did participate the mailing deadlinefor your log is March 1st, and logs go to North Carolina QSO Party, c/o K4EG, P.O. Box 3064, Burlington, NC 27215.

Another event that did not make the February deadline was the North American Sprint. Dates for that one were February 2nd for CW and February 9th for the SSB weekend. I'm sure the *National Contest Journal*, sponsors of the "Sprint," got the information to its readers, who are the main participants in this event. Your CW logs go to Rusty Epps, W6OAT, 948-H Kiely Blvd., Santa Clara, CA 95051. The SSB logs go to Rick Niswander, K7GM, 1914 West Cortez Circle, Chandler, AZ 85224. The next "Sprint" will be held on September 14th and 21st.

A bonus for you prefix collectors, and hopefully one that will be activated in the coming WPX SSB Contest, is that as of January 1st two new prefixes have been added to the Cayman Islands. The island of Little Cayman will now sign ZF8, and Cayman Brac will use ZF9. So you fellows planning a contest expedition to the Cayman Islands in the coming WPX Contest should take advantage of the bonus.

A final reminder: Your log for the *CQ* 160 Meter CW Contest should have been in the mail by February 28th. You have to the end of this month, March 31st, to beat the SSB deadline. They can be sent to Don McClenon, N4IN, 3075 Florida Ave., Melbourne, FL 32904, or directly to *CQ*.

I sometimes wonder if contest planners read this column. Just for the record, deadline for events in June is March 15th, and April 15th for July activities. Mailing them directly to my home address gives you an additional few days and also saves us forwarding postage.

73 for this time, Frank, W1WY

14 Sherwood Road, Stamford, CT 06905

1986 NORTH AMERICAN QSO PARTIES

Sponsored by the National Contest Journal.

Eligibility: Any licensed radio amateur may enter.

Object: To work as many North American stations (and/or other stations if you are in North America) as possible and as many multipliers as possible during the contest period.

Entry Classification: Single operator and multi-operator unlimited. Multi-operator stations may be multi-transmitter but are limited to one signal per amateur band. Use of helpers or spotting nets by single operators entries is not permitted.

Contest Periods: 18:00 through 06:00 UTC. The CW QSO Party runs from 1800Z April 12, 1986 until 0600Z April 13, 1986. The SSB QSO Party runs from 1800Z April 19, 1986 until 0600Z April 20, 1986. Single operator entries may operate any ten hours of the contest period. Off time must be taken in 30 minute periods minimum. Multioperator entries may operate the entire contest period.

Mode: CW only in CW Parties. Phone only in Phone Parties.

Bands: 160, 80, 40, 20, 15 and 10 meters only. You may work a station once per band. Suggested frequencies are form 35 kHz above the lower band edge upwards on CW, and 1865, 3850, 7225, 14250, 21300 and 28600 on phone. Try 10M at 19Z and 20Z, 160M at 0430Z and 0530Z.

Exchange: Operator name and station location (state, province or country).

Valid Contact: A valid contact consists of a complete, correctly copied and legibly logged two-way exchange between a North American station and another station. Proper logging requires including the time of each contact. Regardless of the number of licensed callsigns issued to a given operator, one and only one callsign shall be utilized during the contest by that operator.

North American Station: Defined by the rules of the CQ WW DX Contests with the addition of KH6.

Scoring: Multiply total valid contacts by the sum of the number of multipliers worked on all bands. Multipliers are states (including KH6 and KL7), VE call areas and other North American countries (do not count USA, VE, KH6 or KL7 as countries). The eleven Canadian multipliers are VE1 through VE8, VO1, VO2, and VY1. Non-North American countries do not count as multipliers.

Reporting: North American QSO Party Logs must be sent to Dave Pruett K8CC, 2727 N. Harris Rd., Ypsilanti, MI 48198. Entries must be postmarked not later than 30 days after the Party to be eligible for trophies and awards. An entry consists of (1) a summary sheet showing the number of valid contacts and multipliers by band, total contacts and multipliers, total score, name, callsign, and address of the operator, station callsign and station location; (2) a complete, legible log of all contacts (including dupes marked as such) with indication by numbered sequence of multipliers claimed; and (3) a separate check sheet for each band. Logs, summary sheets, and check sheets may be home-made or patterned after those published periodically in the NCJ.

Penalties and Disqualifications: For each unmarked duplicate QSO, you lose that contact plus an additional three contacts; for each QSO for which you are not in the other station's log, you lose that QSO plus an additional one contact; and for each QSO for which the log data is incorrectly copied in any respect, you lose that contact. Entries with score reductions in excess of 5% will be disqualified. Any entry may be disqualified for illegibility, illegal or non-ethical operation. Such disqualification is at the discretion of the NCJ Contest Review Committee.

Awards: A trophy will be awarded to the highest scoring entrant in the CW QSO Party, the highest scoring entrant in the SSB QSO Party, and to the operator with the highest total combined score from both Parties. Certificates of merit will be awarded to the highest scoring entrant with at least 200 QSO from each USA state, Canadian call area, and other country.

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Complete KC-1 systems begin at only **$219.95**

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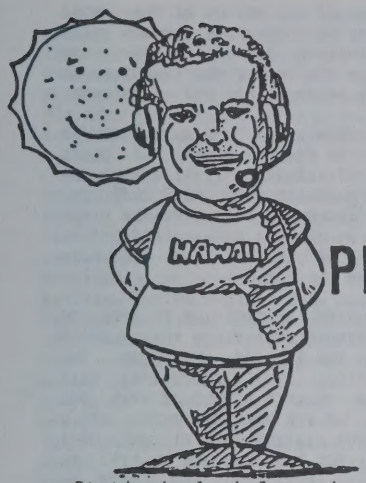


KH6BZF PROPAGATION REPORT

Lee Wical, KH6BZF

Statistical information is compiled by KH6BZF and processed on a computer by VE3BMV.

The first diagram shows the value of solar flux (top curve) and SSN - sunspot number (bottom curve). The Y axis and scale is the same for both. The X axis is calibrated in days of the month.

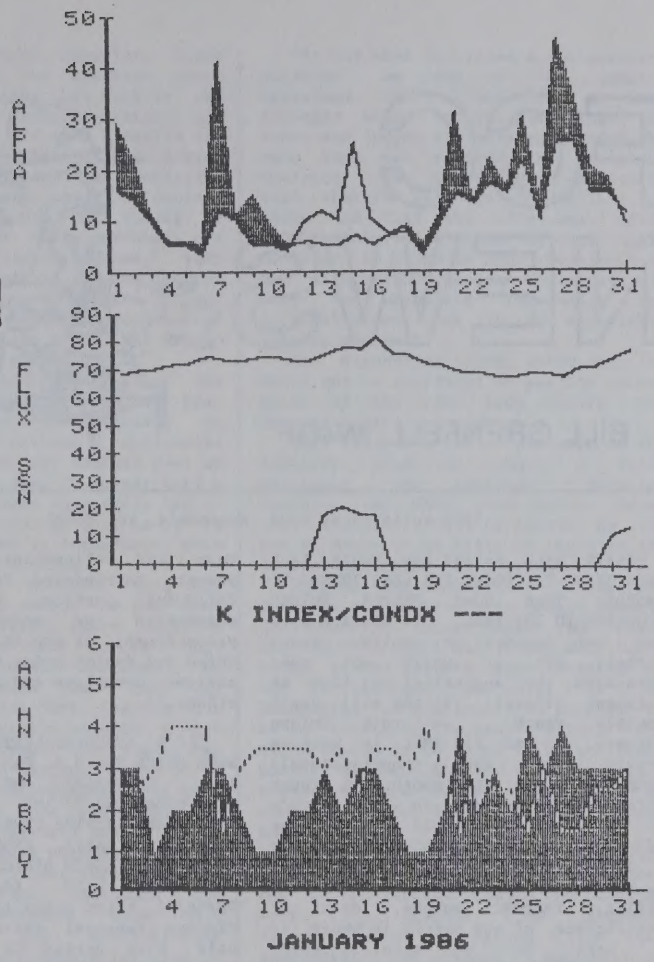
The second diagram shows variation of the Alpha Index for each day. The dark shaded area shows increases, while the white area shows decreases in the value of the Alpha Index for each day.

The third diagram shows the value of the K Index (shaded area) on a scale from 0 to 6. The dotted line represents the propagation quality where the scale is: from 5 = Above Normal to 1 = Disturbed.

FORECAST:

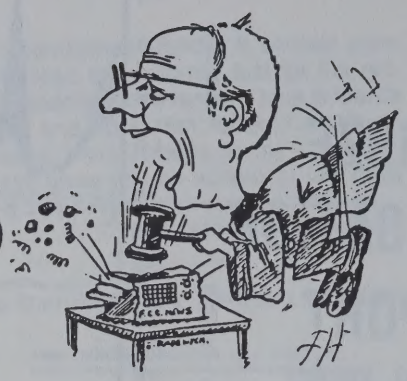
BEST HF CONDX: MAR: 01 - 02, 28 - 30

BEST VHF CONDX: FEB: 23 - 24



JAN '86	CONDX	SOL FLUX LEVEL	SSN#	GEOMAGNETIC LEVEL	ALPHA INDEX	K INDX	NOTES
01	LN-BN	069 VY LOW	0	ACTIVE	16/29	K=3	NO SUNSPOTS
02	LN-BN	070 VY LOW	0	UNSETTLED-ACTIVE	14/22	K=3	NO SUNSPOTS
03	LN	071 VY LOW	0	UNSETTLED-ACTIVE	10/11	K=1	NO SUNSPOTS
04	HN	072 VY LOW	0	ACTIVE-QUIET	05/06	K=2	NO SUNSPOTS
05	HN	073 VY LOW	0	ACTIVE-UNSETTLED	05/06	K=2	NO SUNSPOTS
06	HN	075 VY LOW	0	QUIET-ACTIVE	03/05	K=3	NO SUNSPOTS
07	LN-DIS	074 VY LOW	0	UNSETTLED-ACTIVE MS	12/41	K=3	NO SUNSPOTS
08	LN	074 VY LOW	0	QUIET-UNSETTLED	10/11	K=2	NO SUNSPOTS
09	HN-LN	075 VY LOW	0	QUIET-UNSETTLED	05/15	K=1	NO SUNSPOTS
10	HN-LN	075 VY LOW	0	UNSETTLED-ACTIVE	05/09	K=1	NO SUNSPOTS
11	LN-HN	074 VY LOW	0	QUIET	04/05	K=2	NO SUNSPOTS
12	LN-HN	074 VY LOW	0	QUIET-UNSETTLED	10/06	K=2	NO SUNSPOTS
13	LN	077 VY LOW	18	QUIET-UNSETTLED	12/05	K=3	RGN 4710(8) S13, W52
14	LN-HN	079 VY LOW	21	UNSETTLED-ACTIVE	10/05	K=2	RGN 4710(8) S12, W65
15	BN-HN	078 LOW-MOD	18	QUIET-UNSETTLED	25/07	K=3	RGN 4710(8) S11, W78
16	LN-HN	083 VY LOW	18	QUIET-UNSETTLED	10/05	K=3	RGN 4710(8(8) S11, W89,
		FLARE ENHANCED		FLARE M6/OF@ 16/1606 UTC			
				FLARE M1/SF@ 16/1850 UTC			
17	HN-LN	077 VY LOW	0	QUIET	07/07	K=2	NO SUNSPOTS
18	LN	076 VY LOW	0	QUIET-UNSETTLED	08/09	K=1	NO SUNSPOTS
19	HN	073 VY LOW	0	QUIET	03/05	K=1	NO SUNSPOTS
20	LN	072 VY LOW	0	QUIET-UNSETTLED	09/11	K=2	NO SUNSPOTS
21	LN-DIS	070 VY LOW	0	UNSETTLED-ACTIVE	15/31	K=4	NO SUNSPOTS - STRATWARM
22	LN	070 VY LOW	0	UNSETTLED	13/13	K=2	NO SUNSPOTS - STRATWARM
23	LN-BN	069 VY LOW	0	QUIET-UNSETTLED	17/22	K=3	NO SUNSPOTS - STRATWARM
24	LN-BN	069 VY LOW	0	QUIET-ACTIVE	15/16	K=2	NO SUNSPOTS - STRATWARM
25	BN-DIS	070 VY LOW	0	QUIET-ACTIVE	22/30	K=4	NO SUNSPOTS - STRATWARM
26	LN	070 VY LOW	0	ACTIVE-UNSETTLED	10/13	K=3	NO SUNSPOTS - STRATWARM
27	BN-DIS	069 VY LOW	0	UNSETTLED-ACTIVE-	25/45	K=4	NO SUNSPOTS - STRATWARM, MINOR STORM LVLS
28	BN-DIS	072 VY LOW	0	UNSETTLED-ACTIVE-	25/34	K=3	SUSPECT SPOTS OVER EAST LIMB, MINOR STORM
29	LN-BN	073 VY LOW	0	UNSETTLED-ACTIVE	15/20	K=3	SUSPECT SPOTS OVER EAST LIMB
30	LN-BN	076 VY LOW	11	UNSETTLED-ACTIVE	15/18	K=3	RGN 4711(1) S07, E98
31	LN	079 VY LOW	14	UNSETTLED	11/09	K=3	RGN 4711(4) S07, E85

FCC NEWS



BILL GRENFELL, W4GF

7216 Valleycrest Blvd. Annandale, VA, 22003

SENATE BILL S-1667 AND HOUSE BILL H.R. 3378 "...POSES FAR LESS THREAT TO AMATEURS THAN SOME PEOPLE THINK" ACCORDING TO THE ARRL. "...(1) the bill does not propose to outlaw phone patches; (2) it would not make possession (by anyone) of any kind of equipment illegal; (3) the bill can't possibly reach... a vote before February...; and (4) ARRL is working closely with the (Congressional) Committee staff to smooth out rough spots." As I reported in last month's FCC NEWS the bills would broaden the definitions of prohibited practices, and of protected communications to include "...any transmission of signs, signals, writing, images, sounds, data or intelligence of any nature in whole or in part by a wire, radio, electromagnetic, or photoelectric system that affects foreign or interstate commerce." It would amend the U.S. Code with respect to unlawful interception of wire and wireless electronic communication, authorizing the recovery of civil damages from, and introducing stiff penalties for computer crimes and destructive "hacking." Licensed Amateur Radio and CB transmissions are listed among 'unprotected' communications..." A League official reports he cannot find any evidence that the cellular telephone industry is at war with amateur radio, (such as) trying to abolish phone patches. (ARRL Letters 12/19/85 and 11/07/85; QST, January 1986, League Lines; Westlink Report, 12/27/85).

FCC HAS AMENDED THE AMATEUR RADIO SERVICE RULES "TO PROHIBIT DISQUALIFIED PERSONS FROM PARTICIPATING IN THIRD-PARTY COMMUNICATIONS" (PR Docket No. 85-51, adopted 11/20/85, effective 01/24/86). The Report and Order deletes paragraph (d) of Rule Section 97.79, and amends Section 97.114. The 97.79(d) requirements are included in amended 97.114(c)(1). In addition to the previous provisions and limitations of Section 97.114, the amended Section contains the following: "(c) The licensee of an amateur radio station may not permit any person to participate in traffic from that station as a third party if: ...(2) The third party is a prior amateur radio licensee whose license was revoked; suspended for less than the balance of the license term and the suspension is still in effect; suspended for the balance of the license term and relicensing has not taken place; surrendered for cancellation following notice of revocation, suspension or monetary forfeiture proceedings; or who is the subject of a cease and desist order which relates to amateur operation and which is still in effect."

FCC'S 12/20/85 LISTING OF COUNTRIES WITH WHICH THE U.S. HAS ARRANGEMENTS FOR THE EXCHANGE OF THIRD-PARTY COMMUNICATIONS AND AGREEMENTS FOR OPERATION IN THE OTHER COUNTRY ON A RECIPROCAL BASIS, ADDS JAPAN AND THE REPUBLIC OF SOUTH AFRICA TO THE 08/08/84 RECIPROCITY LIST. Additions to the 08/08/84 third party list are: United Kingdom (special event stations with call sign prefix GB followed by a number other than 3); and 4U1VIC in Vienna, Austria.

"...A DRIVE TO ACTIVELY SEEK A FULL TIME RECIPROCAL OPERATING AGREEMENT WITH MEXICO" IS BEING SPEAR-HEADED BY THE SAN DIEGO RADIO CLUB COUNCIL. An attempt will be made "...to influence legislation pending in Congress, which reportedly favors an agreement. So far, though, it has been impossible to get positive action out of Mexico." (Westlink Report, 12/27/85). The first U.S. reciprocal operating arrangement was concluded many years ago with Canada and did require congressional approval. However, our Congress long ago provided that such arrangements would not require its approval. Soon after the Canadian agreement was effective, a similar arrangement was sought with Mexico. Several attempts made over the intervening years have been unsuccessful. Although some U.S. citizens have been licensed by Mexico to operate there and others with a U.S. license have been permitted to operate there on a temporary basis, Mexico has obviously been reluctant to conclude a reciprocal agreement. To my knowledge, no clear-cut reason for shunning such an agreement has been forthcoming from the Mexican authorities.

FCC'S SPREAD SPECTRUM RULES FOR AMATEURS (SECTIONS 97.3(cc), 97.71 AND 97.84(g) WERE PUBLISHED IN THE 12/19/85 ISSUE OF THE ARRL LETTER. As well as the text of the new rules, FCC's Report and Order, GEN Docket No. 81-414, (adopted 05/09/85) contains a comprehensive description of the effect of the rules and why they were adopted. The new rules become effective June 1, 1986 and provide for the use of the technique in the amateur bands at 420 MHz and above.

TWO CALIFORNIA AMATEURS HAVE FILED A PETITION WITH FCC FOR TECHNICIAN CLASS OPERATOR PRIVILEGES IN 1,175 kHz OF THE TEN METER BAND AND THEY "SUGGEST" TWO 100 kHz SEGMENTS FOR REPEATER USE THEREIN. By early January '86, no disposition of the petition had been announced by the FCC.

IN OPPOSING A PETITION TO FCC TO ALLOW UNLICENSED HOME VIDEO TRANSMISSION DEVICES IN THE 902-928 MHz BAND, THE ARRL TECHNICAL STAFF CALCULATES THAT THEY COULD PRODUCE A VOLTAGE OVER 500 MICROVOLTS AT THE RECEIVER INPUT OF A GOOD AMATEUR STATION AT A DISTANCE OF 1 KILOMETER! FCC has assigned RM-5193 to identify the petition, and should be used to identify the comments filed on it. See my paragraph in last month's FCC NEWS for more information on the nature of the devices.

THE FCC HAS UPHELD ITS STAFF DECISION DENYING A PROPOSAL BY A FLORIDA AMATEUR TO ESTABLISH A VOLUNTEER AUXILIARY MONITORING SERVICE COVERING ALL RADIO SERVICES. In 1982 the Communications Act was amended "...to authorize FCC to use volunteers in the Amateur and Citizens Band Radio Services to monitor violations of the ...Act and FCC rules." In 1984 "...a volunteer Amateur auxiliary was established pursuant to an agreement with..." the ARRL "...concerning the training and administration of the auxiliary." the purpose of the auxiliary is to "...conduct monitoring of the amateur radio service frequencies to encourage compliance with the rules and good operating practices..." FCC's Chief, Field Operations Bureau, "denied the petition on the basis that Congress had only authorized the Commission to use volunteers in the amateur and Citizens Band Radio Services; that federal law precludes such voluntary and uncompensated service other than in these two services; that the Communications Act prohibits the interception and disclosure of radio signals by volunteers in most other radio services; that establishment of an auxiliary for all radio services at once would be too broad and ambitious a project for effective FCC oversight and supervision; and that since the Commission's regulatory emphasis in a number of services has concerned signal analysis, the expense of appropriate equipment and necessary training may be prohibitive." The Commission found no merit in the further contentions raised by the petitioner in his application for review. He is listed in the '86 Callbook as a Silent Key which indicates he must have passed away before FCC's denial was released. (FCC NEWS Report No. GN-7; and, Memorandum Opinion and Order, FCC 85-616, 36303; both released on 11/22/85).

THE SUSPENSION OF J. FRED RILEY, WA8AJN, FOR CAUSING WILLFUL AND MALICIOUS INTERFERENCE BECAME EFFECTIVE 11/05/85. He may apply to have the suspension lifted after one year from that date.

THE PETITION TO FCC FOR CREATION OF A PUBLIC DIGITAL RADIO SERVICE (PDRS) AND THE REALLOCATION OF 52-54 MHz FROM THE AMATEUR RADIO SERVICE TO THE PDRS, HAS BEEN ASSIGNED RM-5241. See last month's FCC NEWS for details on this new service proposed by Donald Stoner, W6TNS.

"...AS AN AMATEUR OPERATOR'S PROFICIENCY IN THE RADIO ART INCREASES, REWARDS IN THE FORM OF ADDITIONAL PRIVILEGES SHOULD BE GRANTED." This was included in the FCC's 12/12/85 Memorandum Opinion and Order denying a petition for Reconsideration and Request for Hearing filed by Mr. Shaler Hanisch of Pasadena, CA. His previous request for amendment of the amateur rules to authorize Technician class amateur operators telegraphy and telephony privileges in the 160 meter band had been denied. The Commission continued with: "This is in keeping with one of the fundamental purposes of the Amateur Radio Service: Encouragement and improvement of the Amateur Radio Service through rules which provide for advancing skills in both the communication and technical phases of the art." See Section 97.1 (c) of the Amateur Rules.

A PETITION, RM-5251, TO ALLOW NOVICE AMATEUR RADIO OPERATORS ACCESS TO THE 902-928 MHz BAND HAS BEEN RECEIVED BY FCC, FROM LARRY W. GARRENS, WD5H, OF BRADY, TX. the comment period ended 01/15/85. (W5YI Report, 01/01/86).

WHILE FCC NOW PROHIBITS RETESTING A CANDIDATE WITH THE SAME TEST THAT WAS PREVIOUSLY FAILED, IT ALSO DIRECTS THAT THE VE TEAMS HAVE THE RIGHT NOT TO RETEST ANYONE AT THE SAME TEST SESSION. (December 1985, QST, page 13)

A HIGHLY RESPECTED SAN DIEGO ENGINEERING FIRM IS URGING THE FCC TO TIGHTEN ITS RULES GOVERNING THE ALLOWABLE LEVELS OF CABLE TELEVISION SYSTEM LEAKAGE. It opposes any decision by FCC in Docket 85-301 that would liberalize radiation leakage standards for CATV-owned terminal devices. "The wideband and insidious nature of CATV leakage makes it essential that the Commission tighten the leakage standards for all CATV terminal devices." The comment was signed by Robert F. Gonset, President, Communications General Corporation. (Westlink Report, 12/27/85).

WM4T TOWER TRIAL

PRB-1 HAS BEEN SUCCESSFULLY TESTED IN COURT. The recently - enacted FCC order restricting the ability of local governments to make laws and ordinances governing the installation of amateur antennas and support structures was the basis of an important decision favoring John Thernes, WM4T, in his three year court battle with the town of Lakeside Park, Kentucky. On January 6, the three member 6th Circuit Federal Appellate Court sitting in Cincinnati, Ohio, agreed with Thernes and threw out a lower court decision which had backed a Lakeside Park Zoning Board decision not to issue WM4T a construction permit for a 70 foot tower and HF antenna installation.

PRB-1 was the deciding factor in the case according to Thernes, and based upon it, the three appellate court justices vacated the district court order and remanded the case back to the lower court for reconsideration and final disposition. It also directed the district court to consider the guidelines of PRB - 1 in any final decision. "The federal appeals court recognized that according to the FCC's ruling in PRB -1, that amateur radio operators are entitled to a reasonable antenna," said Thernes, adding that it was the legitimate interest and concern on the part of the FCC and its subsequent issuance of its PRB -1 preemption order that weighted heavily on the court.

WM4T went on to explain that the court not only found in favor of him, but ordered that the finding be "published," thus setting a nationwide precedent. The Kentucky amateur went on to say, "No longer does it appear that a community will be able to totally ban an amateur radio antenna as long as it is safe and constructed in accordance with general building practices."

He reiterated, however, that his fight is far from over. He now must return to the district court where a decision will be made as to what constitutes a "reasonable antenna." As the federal appeals court case was proceeding, Lakeside Park, fearing that it might lose, quickly enacted a new ordinance last December that limits ham radio antennas to a maximum height of 50 feet, leaves the interpretation of what constitutes a tower open to decision by the city council, permits only a single 8 foot long horizontal element, demands special designs to meet their 100 mph wind survival code (although the Kentucky State Building Code only requires 86.6 MPH survival--the generally accepted standard for wind - load Zone 2 per the Electrical Industries standards), and still attempts to usurp federal preemptive powers by a attempting to regulate TVI and RFI to consumer electronic products.

The Lakeside Park ordinance contains a provision that states that "any such apparatus or equipment shall require a building permit." This, Thernes maintains, means that even the purchase of a TV receiver, stereo set, microwave oven or any device that deals in any way with RF energy requires a citizen in lakeside Park to obtain a building permit from the city to use it. WM4T explained: "Obviously, I don't think that was the intent of the city, but that is the legal interpretation of [that section of] the ordinance, and we are going to fight it. We brought all these matters before the council twice, and they totally ignored them in that they did not change the wording of the ordinance to accommodate those concerns. So, we are going to wait and see if the city brings these points up at the district court and state that it has a reasonable ordinance on the books. Should they attempt to do that, we are going to demonstrate very effectively in our briefs before the district judge, all of these concerns..."

The district court is not only under order by the appellate court to render a new decision in the Thernes case based on the FCC preemption guidelines as set out in PRB - 1, but has further pressure in the form of a dissenting opinion from one of the three appellate court justices who was even tougher on Lakeside Park than his colleagues.

"We had what is called a 'dissenting decision' by one of the judges" explained WM4T, "who took a much stronger stand on our side than the other two judges who merely remanded the case back and vacated the previous decision. The third judge basically said that the city was stonewalling the issue and that the city was being unreasonable...and that the city would continue to throw as many roadblocks in our path as possible and would not sit down and negotiate reasonably and rationally on what is an acceptable antenna system."

The dissenting judge noted that he would not be surprised to see the second phase of the case back before the appeals court!

This places a lot of pressure on the district court to render a fair, equitable and impartial decision quickly, and WM4T says that he hopes that the matter will be solved by the end of March or at least by the time the Dayton Hamvention comes around.

Thernes had high praise for the FCC, the ARRL and particularly League counsel Christopher D. Imlay, N3AKD. The Report and Order on PRB-1 was issued only hours prior to the appeals court hearing on the Thernes case, and Imlay flew from Washington to Cincinnati to present it as a friend of the court brief. His quick action is believed to be at least partly responsible for this important victory by John Thernes, WM4T, and an even bigger one for all radio amateurs nationwide.

(Note: WM4T singled out Westlink Report for praise, noting that almost all of the letters sent to the Lakeside Park City Council from amateurs elsewhere in the nation cited this newsletter as their source of information on the case.) (Westlink)

DISH PREEMTION

"Discrimination between types of antennas governed by local or state zoning regulations can no longer be tolerated," says the FCC in its decision on the matter of federal preemption over home satellite "dish" antennas.

As in its recent decision on federal preemption of amateur radio antennas (PRB-1), the Commission did not place an outright ban on cities, states or other local governments from placing minimal restrictions onto such structures.

It did, however, say that such regulations must be uniform and applied equally to all antennas erected for any reason.

In other words, a home TVRO dish falls into the same category as a master TV receiving antenna, cable television "head end" receiving system, amateur, CB or commercial radio antennas and other such installations.

Since the terms of PRB-1 specifically preclude local authorities from enacting laws or regulations that are an outright ban on amateur radio tower and antenna installations, it now appears that the two laws will work in concert to preclude governments from over-regulating any form of radio antenna system.

Unless challenged in the federal court system, it appears as if the "zoning reign of terror" to all sorts of privately owned antenna systems may now be at an end. (Westlink Report)

Chuck Clark, K4ZN

TRAFFIC EMERGENCY

SECRECY OF COMMUNICATIONS

The lead article in the January issue of "Worldradio" warned us about a plot to outlaw phone patches. Thus, making it a criminal offense to possess a receiver capable of receiving cellular phone communications. If such a law were passed it would become a classic case of bureaucratic bungling.

Two decades ago the FCC adopted Section 15.65 which required all TV sets sold after April 30, 1964, to be able to receive all TV channels, 2 to 83 inclusive. Since then, the FCC withdrew its allocation of channels 70 to 83 from the TV Broadcast Service. So, if such a law were passed, it would make it illegal to own a TV set which had a feature specifically required by law. Probably 95 percent or more of the TVs now in service would have to go to the junk yard.

The author of the "Worldradio" article said that he found other problems with the bill: it would outlaw phone patching or confine it to specific frequencies where other amateurs would not be allowed to listen, let alone operate there.

Then came the January "QST" saying it is not that bad. The bills, identified as the Electronic Communications Privacy Act of 1985, S.1667 and H.R. 3378, do bear watching, but in their present form they do not pose any immediate threat to any aspect of Amateur Radio. This columnist remains neutral on the question. Time will tell who is right.

One could ask why any such bill is really needed. Section 605 of the Communications Act of 1934 has been around for over half a century. It pretty well covers the field except for the computer world. Maybe an amendment could cover this area. Some people seem like to think up more laws which make life more complicated without really solving any problem. Those of us old enough to remember Prohibition, for example, will also remember that the Eighteenth Amendment and the Volstead Act produced the opposite result from what their authors wanted. People who never drank before began to drink and organized crime found the high prices commanded by illegal booze quite attractive. History is repeating itself with the drug scene today.

Perhaps it might be more correct to say that Section 605 could cover the field if it were enforced. Although such violations have occurred, I don't recall having heard of a single case of anyone having been prosecuted for violating its secrecy rule.

One such incident occurred recently when a newspaper published information learned "from an amateur radio operator who intercepted communications from the President aboard Air Force One." The reporter refused to identify the amateur, "to protect his sources," but the reporter himself violated Section 605 by divulging this information knowing how it had been obtained. As yet, no one has been prosecuted.

In another area, a case could be made that the use of Fuzzbusters and other radar detectors, as well as the use of scanners, either using thus obtained information for one's own benefit or divulging it to anyone else, violates the Act. Maybe some State might want to make a test case.

A recent amendment to the Communications Act has made it clear that Amateur Radio communications are not protected by Section 605. Previously there had been some question because the wording was not clear. Back in 1935 the FCC decided that they did apply to us. Now it is clear that they do not.

Also, back then, when we filed an application with the FCC, we had to swear to our application, that what we wrote on the form was the truth. In addition we swore to preserve the secrecy of radio communications. Furthermore, the amateur who took an examination for class C license had to swear that everything was done honestly. Somewhere along the line the oaths were eliminated.

If we suspect that one of our "customers," someone for whom we are sending a message via Amateur Radio, would not want the message to go out for all the world to hear, it is only proper that we should explain the situation before accepting the message. On the other hand, even though the law does not require that we observe secrecy concerning amateur traffic, we should do so anyway as responsible communicators. It does not help the image of Amateur Radio for us to be publishing the private affairs of those whose traffic we handle. Adding comments about messages we handle by voice modes is not in good taste. Remember, a lot of people have scanners that cover the amateur VHF bands. Also, more shortwave receivers these days come with BFO and so, can demodulate SSB signals.

CW and digital modes help, especially in the case of emergency traffic where it is often in the public interest that the content of messages be kept confidential to reduce the possibility of generating undesired rumors. While it is true that a lot of people have computers that can read CW and other digital modes, it is not nearly as easy to accomplish as it is to tune in a voice signal and listen to what is being said. (K4ZN)

RADIOSPORTING REWARD

RADIOSPORTING is sponsoring its subscription drive. The reward is extension of subscription by one issue for each new subscriber sponsored.

Tell a friend about RADIOSPORTING and encourage him to subscribe. If he does so, he should mention your call sign on his subscription application: "Sponsor: W1ABC." RADIOSPORTING will automatically extend the sponsor's subscription by one issue for each new sponsored subscriber. No special forms required, just make sure sponsor's call is mentioned.

Dear Yuri:

Include my renewal for two years. Have plenty of confidence in your magazine, because it talks our language (DXing & Contests). Have just ten years in the hobby, but I have enjoyed every moment of it. Need one more to be on the Honor Roll and have a couple of records in the WPX CW Contest. I couldn't get involved in any contest this year (1985) because a lot of problems with my new QTH. But I'm sure that you will hear my call in the next.

By the way, my suggestion is that in the future try to include someone that writes a column about computers and amateur radio. That will be our next step in our hobby.

Hope to talk with you again next year in Dayton. Best 73, Eduardo KP4EQF

Dear Eduardo,

Thanks for the kind comments. I hope your QTH will be operational very soon and we will "fight" again on the bands.

Yes, we are looking for the computer column leader. Some say we don't need to mix computers with radio, but we already have more than half of our radios filled with the computer stuff. Computers are great tools especially for the contesters on CW. We already had some programs described and listed and there should be more to come.

73 and CU in the pile-ups, VE3BMV

Dear Yuri:

I have just finished reading 12 issues (Dec. 84 to Nov. 85) of RADIOSPORTING loaned to me by my good friend KO8M and I am very impressed.

We have the same views on almost everything. Maybe we better cross out the almost. I haven't found anything that I disagree with you on. My DX chasing has come to almost a complete stop because of the lids who can't recognize their call area or a call not their own when the DX station is calling. Everybody occasionally goofs and calls when the DX station does not give instructions often enough. But for the great majority of the lids there is no excuse.

When I found myself getting so mad I wanted to use some of their methods, I said "that's enough" and pulled the switch. So now I am an occasional DXer. Another thing that grinds me is the big gun with a 5 X 5 station (5 kW and 5 tons of aluminum) comes on when a rare one is on (for us little pistols anyway) and says "Hi, Jim, gee I haven't talked to you since last week. How's the weather down there, bla, bla, bla"!!!?

Want another one? How about the one's and two's who keep hollering "Work 'em, by call areas, work 'em by call areas." Nothing wrong with that if you are a 1 or 2. But when you are a 8, 9, or 0 it's the pits. The DX station should use the day of the month to start with and not the first call area all the time. (If today is the 29th then he would start with the 9th call area.) Also he should not work more than five stations in a call area at a time. That would keep some of the lids from calling out of turn knowing that they will have a shot at the DX in a while. The DX station should keep discipline. Even if he has to give out the call and say "you're through for the day you will not get a contact. Try tomorrow IF you can behave!!!" Or just say "you are on my other list turkey, no contact for you." That works! I have heard it used by a few DX stations in the past and believe me, the QRM dropped.

The station here is Drake R4C-T4XC into an old Johnson Thunderbolt. The antenna farm is not too big. I use a Wilson System One (the original one) Tribander up 70 ft. a high gain Hy-tower Vertical (lost count of the radials). I got 100 ft. of Rohn 25 up waiting for the prop pitch rotor. I am going to build a 40 m Yagi when I get the materials together and something for 20 on top of that. For 80 m I have a diamond shaped quad loop fed on the side hanging from the top of the 110 ft. tower. Sometimes it is better and sometimes the Hy-tower is better. I think the radiation angle of the station on the other end has a bearing on that. One two or more hops???

I also agree with Fred KS7T. You should twist his arm for a couple articles. I know I will enjoy my new subscription. Keep up the good work. BCNU in the Contests.

73, G. "Ed" King K8OT

Dear Yuri:

First, I will say thanks for a fine magazine, it has improved 100% over the past year and I'm sure will continue to improve. My two year renewal has preceded this letter. I have a few thoughts of my own that I would like to say.

First, in regard to the DX and contest articles in QST, I think instead of people groaning they should write to their directors. There are a lot of DX-ers and contesters, and a large volume of mail usually attracts attention. Don't sit on your hands, do something, fight for what you want. Whether it's QST, Radiosporting, CQ, or the Wall Street Journal, let them know what you want to read. I know *RADIOSPORTING* will listen, I'm not sure about the others, but at least try.

Secondly, for people that want to place guest operators in the multi-op category, let me say that maybe we all belong in that category, after all, I think most of us had some help in setting up our stations, even if it was only putting up the tower(s). As long as the rules are followed, there are still single operators doing all the logging and duping themselves. I don't believe that making them multi-single or having a hired gun category is fair to those few that sometimes travel long distances and activate rare countries to give us a new country multiplier.

How about checking the license class of stateside guest ops, particularly in phone DX contests. Third party and all that stuff you know. This is for multis and single ops both.

Why not eliminate the spotting nets altogether and let every person or group do what they can on their own. This will also remove the temptation from the weak-willed who like to eavesdrop.

Lastly, lists and nets. If you don't like them, stay away and don't use them. Why get an ulcer over something that seems destined to stay. While I don't personally favor them, I have used them. When you make a sked and invite a few of your friends to exchange reports with your friend, isn't that a list? Of course, I guess that's different, because you don't do it all the time.

If you don't like "so and so" working a list, why not get a visa and passport and do it yourself. Maybe working a pileup of amateurs that speak little or no English might make you a little more understanding.

The DX person has the right, sometimes one of his only rights, to operate as he wishes. Who do we think we are to deprive him of this right. Imagine asking WB4ZNH to operate from a list, I bet that would get a rise. That's also his right. Personally, I like the pileup. But there again, have you heard the "I'm going to be the last one to call" pileups on 75 m lately? Is this the way? In my opinion we need more DX education and a lot of the old-timers need re-education, and don't say "not me."

Keep up the good work Yuri.

73, Bill, AI3Q

P.S. January magazine is super. Articles type style and paper 1st class.

Dear Yuri,

I was located in Crawley, West Sussex, England near the Gatwick Airport and working at a company called MEL, which is located in this town. MEL Crawley is the English company from which MEL Defence Systems Ltd. (MEL DSL) Canada grew. So it will be no surprise

to learn that the callsign for the MEL Crawley Amateur Radio Club is G4MEL. The club has an excellent field site from which to operate ham radio. The club station is located a few miles west of Crawley near a village called Rusper. During the CQ WW DX contest and during normal operating periods, I operated using my U.K. call VE3ZN/GO. I also participated in the Philip's QSO party using the club call G4MEL. MEL is a member of the Philip's Group of Companies.

It was quite an experience working the CQ WW from another country. When an European says he has QRM, he really has QRM. Unless you have experienced their type of QRM from 360 degrees you really cannot appreciate the difficulty they have during a contest. North Americans should consider themselves very fortunate.

I was able to log a total of 12.5 hours during the contest period and was pleased to see conditions were in fairly good shape. I only had capability for 20 meters during the contest. The rig was a FT 101E (100 W) loading into a 204BA monobander at 60 feet. The following is a brief summary of my results: total of 153 contacts; 51 countries worked; 19 zones worked.

Attached you will find a report on the QSO party I have written for our company paper as well as some photos taken during both events.

I am off again in January to the Caribbean, I may be active from a VE0...but this is not confirmed. Keep up the good work with *RADIOSPORTING* at least I can stay current with up-to-date information.

Finally, I am seeking information on a 160 meter sloper. I have a 48 foot tower and the room to extend the 160 meter sloper in an L shape. That is to say, feed the sloper at the top of the tower, slope it down to approximately 10 feet off the ground at the corner of my lot, and across the back to the other corner maintaining a height of 10 feet. I have been unable to find the resonance of this antenna, could someone be so kind as to provide me with a formula to calculate the approximate length of this type of antenna. Or if any one is using a similar set up could you please inform me of the length of your antenna.

Thanks for your time Yuri, all the best to you and yours and Radiosporting in 1986.

Yours fraternally, Curt VE3ZN

Dear Court,

Your antenna problem is mainly due to the proximity of ground for good portion of the "leg" of your sloper. It would be hard to find or give a formula, but generally the wire should be longer than for conventional dipole or an Inverted Vee. Try to make the wire longer by about 15 to 20 percent and then start cutting back while checking the SWR. Even if you reach the resonance of the wire, you might not end up with 50 Ohm impedance. It depends a lot on surroundings and what is on the tower. I had no problem getting 50 Ohm impedance on 80 and 40 meter half slopers, while on 160 the best I could get was 2.4 : 1. If you have the tuner, or your amplifier has enough range on it's PI network, this simple antenna will work even if it is not "on frequency." Try also some "Weird Wire" receiving antennas.

Good luck, 73 de Yuri

Yuri:

Here's my renewal to your fine publication. Sorry for being late, but just moved to a new antenna farm and wanted to delay my renewal until the change of address was finalized.

Keep up the struggle - your magazine has an excellent focus and I look forward to every issue. 73, Rick KC0D

Dear Yuri:

I find your magazine to be one of the "good ones," lots of meat. I hope you can get some more advertising to help.

I especially appreciate the articles and comments on the TS940 that are relevant because it is a new design and still has some bugs that your articles are addressing.

Keep up the good work. Olaf, KF4IX

Dear Yuri:

Congratulations on coming through your first year. How you did all the work involved I do not know!

Even if you do move to the U.S. please remember the Canadians! For instance, if you can possibly continue to allow subscriptions to be paid by personal cheque in Canadian funds, it would be much appreciated.

With my best wishes,

John Beal, VE3LXZ

Dear John,

I don't know either. At times it hurts, but when the issue is out, the pain is forgotten. This happens twelve times a year.

Yes we will do all possible to make it easier for hams around the world to keep *RADIOSPORTING* coming. We also found out that overseas hams would prefer VISA and MASTERCARD payments, so we are taking those too (but we don't take American Express, so leave home without it! Hi). 73, VE3BMV

Yuri, VE3BMV

On page 38 of the January "Radiosporting" you say "we would wait with the contest until the band is cleared of all 'commercials'..."

Yuri. The allocation status of 10 MHz is different to that of 18 and 24, and it is rather important that we recognize it. 18 and 24 MHz are allocated to the amateur service when they have been cleared of "commercials".

10 MHz is allocated for the duration of the present ITU Table to the Fixed Service, and the Amateur Service has only secondary status. In the Canadian table it is allocated to the Amateur Service, but Canadian footnote 6 says:

"The band 10.100-10.150 kHz is allocated to the fixed service on a primary basis world wide. In Canada, the band is allocated exclusively to the Amateur service. Canadian Amateur operations shall not cause interference to fixed service operations of other administrations and if such interference should occur, the Amateur service may be required to cease operations. The Amateur service in Canada may not claim protection from interference by the fixed service operations of other administrations."

Note that it says the Amateur SERVICE may be required to cease operations, not just the amateur STATION concerned.

Although you have a high regard for the conduct and common sense of contesters, I think you will admit that in the heat of a contest anything could happen.

In the case of 10 MHz, it is not a case of "use it or lose it". It is rather "abuse it and we lose it".

I don't particularly like being the carrier of bad news (knowing what happened to such carriers in the old days), but we do need to be quire clear on the facts of life on 10 MHz.

Happy New Year. 73, Bob VE7BS

Dear Bob,

Thanks for pointing it out. I think the contesting should wait a bit until things would come down on 10 MHz. But there should be no problem with awards chasing activities.

I just keep wandering about all those out of band CBers getting away with murder, while we can't even operate on "our" bands. 73, Yuri

Dear Yuri:

Sure enjoy *RADIOSPORTING* I recently renewed, and I am glad to see it in the mailbox.

Thought I'd pass along my idea for a contest I think would be enjoyable for big gun, little pistol, contester, and DXer. (Doesn't sound possible, does it?)

This one is the "place of birth" contest. I've enclosed sample rules. Please run them if you think this will work out. I have selected a weekend that may not conflict with many other events. Feel free to change any times, dates, frequencies, etc.

I will be happy to handle publicity, send rules out, receive logs, score them, and print and send awards to those sending a SASE with their log.

The way this event works is just call, "CQ POB TEST."

"VE3BMV, ur number 001, POB Idaho, from WB7FAH."

Scoring is 1 point per SSB contact, 2 points per CW contact, multiplied by total of 1 point for each state of birth added to total of 1 point for each DXCC country received.

Certificates will be awarded for WAS and DXCC, with total countries over 100 shown. Awards will also be given for top total U.S. scores and top score in each state and country having 3 or more entries. A sample of the rules is enclosed.

The DXer might enjoy seeing how many countries he can work. The contester can have his fun, too. I'm sure you can see how this one could be a pileup running your POB from New Jersey. I should see a lot of activity being near 6-land, I hope! The city lot and a random wire should be a good combination.

I think it's time for some variety on the bands, novice through extra. It could relieve boredom after field day, and be used to limber up for contests.

My address is good in Callbook from 1981 on. I have volunteers to help in scoring etc., from 7-land.

Send logs to: Gary Valley, WB7FAH, 17817 Wayne Ave. N., Seattle, WA 98174.

I decided the best way to handle this is grab the bull by the horns, print rules, and throw the switch! Hope you agree.

73, Gary Valley, WB7FAH.

CLASSIFIED ADS

The Classified Ads rate is 15 cents per word. Remittance in full (check or money order) must accompany copy. Each word, abbreviation, model number, and group of numbers count as one word. No charge for Postal or ZIP code. Ads should be typed or clearly printed on a separate piece of paper. The closing date is the 25th of the month preceding publication. A last name or call must appear in each ad with an address or phone number.

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WANTED ham call & DX auto license plates from anywhere for collection. K3TX, 250 Alden Ave., Yardley, PA 19067-4849

WANTED HALLICRAFTERS S-53A receiver, NATIONAL NC300TS spkr, 1956-7 Callbook showing KN4KWD, modern power supply for for Atwater-Kent model 30. Malcolm, KN4KWD 305 Buckhead Ave., Atlanta, GA 30305. Tel. (404) 231-0084 (weekdays)

SUPER CONTEST QTH for sale, Toronto suburb - Scarborough, 3 bedroom bungalow, next to the park with room for beverages, lot size 46x125', good neighbors, excellent for serious ham with kids. Excellent radio location, will leave 110' Big Bertha self supporting rotatable tower. CDN $129,000 Yuri, VE3BMV, (416) 438-6313

BACK ISSUES OF RADIOSPORTING are still available 1984: DEC, 1985: FEB, MAR, APR, MAY/JUN, JUL, AUG, SEP, OCT, NOV, DEC, 1986: JAN, FEB. Price incl. mail $2 per issue. Complete your collection. Also reprints of articles are available for 20 cents per page plus postage. *RADIOSPORTING*, Box 65, Don Mills, ON M3C 2R6 Tel (416) 438-6313

VISALIA DX CONVENTION

The Southern California DX Convention will convene April 18 through the 20th, at the Holiday Inn in Visalia. Room reservations may be made by dialing (209) 651-5000 and asking for the convention reservation desk. Please do not dial the 800 line. Room rates are $42.00 single and $50.00 double.

Pre-registration for the convention is $38.00 and must be postmarked no later than March 31, 1986. All subsequent registrations will be $40.00. Please make checks payable to SCDX Convention and mail to :

Don Bostorn, N6IC, 4447 Atoll Ave.
Sherman Oaks, CA 91423

The price of registration includes the Saturday banquet and Sunday brunch along with a cocktail party hosted by the Southern California DX Club on Friday night, and the famous Saturday night cocktail party hosted by Henry Radio of Los Angeles.

This year's program will feature many fascinating and interesting speakers including the DX Forum with Jim Rafferty, N6RJ, the contest forum with Dick Norton, N6AA, Lloyd and Iris Colvin, and many others.

Amateur Radio representatives from the People's Republic of China will be in attendance at the Saturday night banquet. In addition to this year's extraordinary program, many fabulous prizes will be given away including: a Kenwood TS940S as a pre-registration prize, a Henry 2K amplifier as the grand prize, and othders such as a Yaseu 757, 209 Hand-held, Butternut 40-80 vertical with 160 adapter, and many more.

A special ladies' luncheon wil be held on Saturday, so don't forget the XYL. The cost will be $8.00.

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INTERNATIONAL RADIOSPORT ASSN.

P.C. Box 65, Don Mills, Ontario, Canada M3C 2R6 Tel. (416) 438-6313

Purpose and objectives:

1. To promote international friendship and goodwill through sportsmanship, radio contesting and DXing.

2. To improve the quality of amateur radio operators and operating through education and experience, by voicing the opinions of radio amateurs that are experienced and have contributed to the hobby.

3. To promote amateur radio contesting and other operating-related activities as a sport, and to provide the publicity and recognition that it deserves in the public media.

4. To publish timely articles in the monthly magazine "RADIOSPORTING" on various subjects of interest to Contesters, DXers, SWL, VHF, UHF and microwave enthusiasts, on RTTY, SSTV, computers in communications, fox hunting and anything of interest to the active ham striving for self-improvement. To feature technical articles on equipment design and modifications, antenna construction, radio-wave propagation, and commercial equipment reviews by qualified people.

5. To organize, as an annual event, the "International Contest Symposium," which runs parallel (evenings) with the Dayton Hamvention; to feature timely topics with the participation of some of the world's leading amateurs at the Syposium.

6. To hold an annual Awards Dinner with an entertainment program, where awards for various achievements will be presented.

7. To maintain and publish all time record tables for significant contests.

8. To sponsor and run an annual World Contest Championship, based on results of a number of major contests, with the annual "Contester of the Year" awards in various categories.

9. To administer the "Contest Hall of Fame" and vote on awarding membership to those who have significantly contributed to the sport of contesting.

10. To coordinate and assist in the scheduling of international contests.

11. To hold regular weekly meetings on air on 20 and 80 m. (14.200, 3.830)

12. To provide an automatic, computer controlled bulletin station that transmits the latest DX and Contest news on CW and RTTY.(14.098)

13. All in all, the IRSA is dedicated to the pursuit of excellence and quality in amateur radio by promoting, publicizing and leading the way.

14. Attractive numbered membership certificates and badges are issued to members.

15. IRSA is run by contesters who are selected for their accomplishments and it is independent of any national or commercial organizations.

16. IRSA will assist and sponsor Contests/DXpeditions, Trophies and other radio sporting and publicity events.

17. IRSA is a non profit organization, with all proceeds to be used to finance events and awards sponsored by IRSA and to cover expenses incured by Association.

18. IRSA members can display the IRSA logo on their QSL cards and correspondence; members agree to obey the Contester's Code of Ethics and to promote it.

The initial fee to join the IRSA is US $12; it includes the cost of a certificate and a badge. The yearly membership dues are US $5. (Or 24 and 10 IRCs resp.)

Honorary Life Membership will be awarded to those who significantly contribute to IRSA and the sport of contesting.

Members are entitled to be elected and to elect officers of IRSA. They will also enjoy many services and privileges offered exclusively to members.

RADIOSPORTING

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